American Aviation

SERVING THE INDUSTRY SINCE 1937

Butler Takes a Defense Assignment
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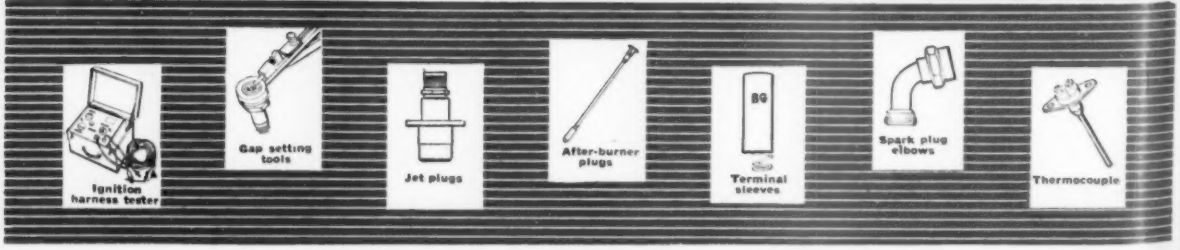

American Aviation NEWSLETTER

Volume 15 Number 26 November 26, 1951

USAF's expansion timetable has been changed again as a result of present production cutbacks. Currently authorized 95 wings, which were slated for completion by October, 1952, will now not be achieved until some time in 1953.

Planned buildup to about 140 wings, originally estimated for mid-1954, has now been moved back to about 1957 at the current rate of appropriations. But the Air Force is certain to push for greatly increased appropriations next year so that the 1954 schedules can be maintained as closely as possible. Few expect the 140 wings to be attained by that date, the most optimistic new date being set for January, 1955.

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Industry sources place the latest estimate on lost aircraft production time at one year. All of 1951's potential output and half of 1952's has already been lost because of U. S. delay in sharply cutting civilian production. Construction materials, machine tools, skilled labor and other items needed for quick expansion of defense production have also been made available to consumer durable goods manufacturers in line with the Government's "guns and butter" program, they claim.

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Machine tool deliveries to the aircraft industry should start increasing soon. Although belated, recent NPA order M-41A, which virtually prohibits shipments of machine tools to consumer durable goods manufacturers, will make more equipment available to all defense producers.

On top of this, Defense officials will rule which contractors will get first call on tools ordered by the Government under its pool order contracts. Thus aircraft and engine producers, who presumably are at the top of the Defense Department's "need aid" list because of the lag in production, will probably get first call on machine tools as U. S. pool orders are filled. The Government will order the machine tool makers to turn over the equipment to hard-pressed aircraft firms.

New program, however, will not be a blank check for aircraft. Other parts of the defense program are also behind and those manufacturers will also be eligible for new tools.

Many aircraft firms which have tried to place orders for new tools have found themselves forced to wait from six months to three years because almost every manufacturer (defense and defense-supporting) had a DO priority. But these new policies should enable them to obtain tools much earlier than had been expected.

Sigmund Janas Sr., former president and director of Colonial Airlines, still wields a crucial power within the airline through his approximately 40,000 shares of stock, and it is reported that Alfons Landa, the new president, is getting "fed up" with his inability to control the company and its board.

Considerable discussion has arisen in aviation and financial circles in Washington and New York over indications that CAB may have been ordered to "lay off" further inquiries into Colonial. CAB activities suddenly ceased some time ago with no tangible prospect of resuming. Janas was known to have had powerful connections within the Administration. His present power is being wielded through at least one director, it is said, through threatening stockholders' suits if a majority of Colonial's board takes action leading toward a merger.

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DPA's top men are now studying the requests by military aircraft "B Products" manufacturers for special priorities in placing their CMP materials orders. Some sort of priority system seems inevitable, but DPA officials are trying to keep the list of eligible companies small enough so that the program will work. Defense Department is understood to be backing the B producers' requests.

•

New Assistant Secretary of the Air Force is Edwin V. Huggins, former executive vice-president of Westinghouse Electric International Co. He succeeds Roswell L. Gilpatric, who recently became AF Under Secretary. Huggins, who received a recess appointment subject to Senate conformation in January, will eventually supervise Air Force installations and procurement.

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U. S. jet engine manufacturers can conserve critical materials by building power plants with shorter life spans, according to a team of eight British specialists which visited this country last summer. They claim long-life engines are unnecessary in wartime because only a small percentage would attain their peacetime life expectancy.

The British experts maintain jet engines having the same dimensions, thrust and thermal efficiency as their longer-lived counterparts can be built with less cobalt, nickel and columbium.

But at least one U. S. engine builder, board chairman Frederick B. Rentschler of United Aircraft Corp., does not agree. He points out that long-life engines are required in American planes to

give pilots the best possible protection. Moreover, some U. S. engines, which originally had a 100-150 hour overhaul period, are now running as much as 1,000 hours between overhauls. He adds that if the British plan were adopted and the useful engine life were under-estimated, it would lead to less economy in material than present American policy.

•

Helicopter industry is said to have okayed preparation of a detailed plan to prepare communities and the public for acceptance of the commercial passenger helicopter when military urgency lessens and commercial production again becomes possible.

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Shortage of structural steel leaves civil airport and airway officials with two alternatives: use prefabricated structures and structural components on construction projects, or postpone such construction.

In so informing the industry, CAA's Office of Aviation Defense Requirements said that where postponement is out of the question proposed structures should be redesigned to save steel through more extensive use of reinforced concrete, elimination of frills and trim, and use of the "lowest practicable quality or grade of materials or the use of substitute materials."

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MANUFACTURERS

Douglas Aircraft survey team, headed by former USAF Assistant Secretary Harold C. Stuart, is in Japan to check on the possibility of establishing carrier maintenance and overhaul facilities there.

Canadian and British designers will be hired by Consolidated Vultee for its San Diego division. They will work on only commercial and unclassified projects until they are cleared.

Low-power nuclear reactor for use by private industry and research institutions in non-military applications has been designed by North American Aviation. Component development and testing are scheduled for completion in mid-1952. Reactor, using uranium as fuel, releases energy equivalent to 160 kilowatts.

Navy machine tools will be made available to Air Force and Army contractors. About 10,000 still remain from World War II storage.

Although working informally, Douglas and Convair have started promoting their planes as a single package for operators who have both long and short haul routes.

New York hiring office has been opened by North American Aviation to obtain engineers and scientists for its California and Columbus divisions.

Kellett Aircraft Corp. will be managed by a committee made up of J. Nelson Brown, treasurer-controller; Charles A. Barnett, chief engineer; and George P. Williams, III, secretary and general counsel, until a new president is named.

PLANES AND EQUIPMENT

J-57, Pratt & Whitney's 10,000 pound thrust jet engine, will be installed in an advanced F-86 Sabre. Another P&W engine, the 5,700 horsepower T-34 turboprop, is being considered as the power plant for future Lockheed, Douglas and Boeing airliners.

Lockheed's 184,000-pound Constitution is now back in Navy service after a 23-week, 1,500-hour maintenance job. Second plane, now in overhaul at Lockheed, will come out in February.

Eclipse-Pioneer will install "flight path control" automatic approach landings systems in 44 United Air Lines Douglas DC-6's and 20 DC-6B's.

Pacific Aircraft Industries, under L. J. Manning as board chairman, is a new firm which has taken over the operations of Pacific Overseas Airlines at Ontario, Calif. The company will continue maintenance and overhaul but also plans to begin seeking manufacturing sub-contracts.

First Martin 4-0-4 to be delivered to Trans World Airlines has been flown to Kansas City for crew training. TWA has 39 more on order.

North American headquarters for service and maintenance of de Havilland Doves may be turned over to Midstates Aircraft Co., Tulsa, Okla., after Jan. 1. Midstates is discussing servicing of the British craft with the Spartan School of Aeronautics.

Douglas Aircraft Co. has completed CAA certification of the first production model of the DC-6A, now being operated by Slick Airways, for gross landing weight of 88,200 lbs. This is an increase from 85,000 lbs., and is the first step toward higher operating weights for the DC-6A cargo planes and certain versions of the DC-6B. At the same time, zero fuel weight was upped from 80,000 to 83,200. DC-6A's maximum gross takeoff weight remains temporarily at 100,000 lbs. pending completion of CAA certification of automatic feathering. It will probably then be increased to 106,900 lbs. by using 108-135 octane fuel.

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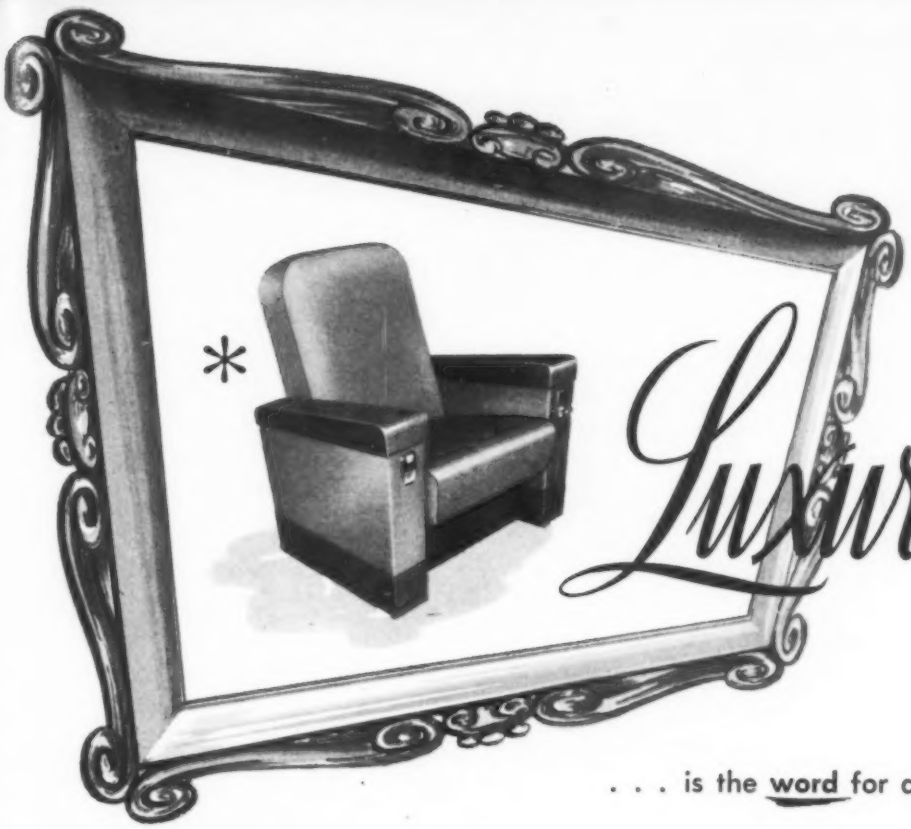
MILITARY

Maj. Gen. William H. Tunner will become deputy commanding general at Air Materiel Command headquarters in Dayton Dec. 1, replacing Maj. Gen. St. Clair Streett, who has been in ill health and who becomes special assistant to AMC's commanding general. Tunner is now deputy commander of the Military Air Transport Service.

USAF is expanding its operational use of the Douglas C-124. Three Strategic Support Squadrons and one Troop Carrier Squadron have already been equipped with the plane and new deliveries are going to the Military Air Transport Service. MATS is studying new ways of loading and unloading cargo with the 50,000-pound payload ship.

Clinton County AFB, Wilmington, Ohio, will be reopened by the Continental Air Command soon for use by USAF reserve training activities now located at the Greater Cincinnati airport.

(Continued opposite page 60)



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Cover Photo

Paul Butler, the new Administrator of the Defense Air Transportation Administration, is president of Butler Company of Chicago, world's largest distributor of printing paper, head of Butler Aviation Co., and also has numerous other industrial interests. He is in Washington as a defense volunteer, not on permanent status. As DATA Administrator, he is to carry out the Commerce Department's responsibilities for mobilization of civil air transport facilities. Now in his early fifties, Butler began flying 20 years ago, and still has a private license. Seeing the need for high-class, efficient and reliable fixed base operation, he started Butler Aviation in Chicago in 1946. At the request of the government, he took over all non-airline servicing at Washington National Airport. On Nov. 10, Butler Aviation took over complete management of Meigs Field, the lakefront airfield at Chicago.

other publications

American Aviation Daily (including International Aviation): Published daily except Saturdays, Sundays and holidays. Subscriptions: $16 one month; $150 one year Daniel S. Wentz II, managing editor.

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Editorial

No All-Coach Carriers

AT least one feature of the low-fare coach problem has been settled decisively by the Civil Aeronautics Board. In a forthright and statesmanlike 4-1 decision, it has rejected proposals to overlay a new system of all-coach routes on top of the existing domestic air transport network.

There is no denying the potent air coach pressure placed on the CAB during the past few years. The propaganda has been flying thick and fast. To the superficial listener it sounded mighty good; after all, who can be against low fares for the masses? But the basic question of what constitutes a sound system of air transportation in the public interest remained.

The Board's decision has not only re-affirmed its own measure of its responsibility but bespoke mature thinking and understanding of air transport economic problems. We recommend that a few impressionable evangelists read it carefully.

"In the present case," the CAB said, "we are called upon to decide whether the public interest requires that we create a new group of air carriers who will charge lower fares, and at the same time be relieved of the traditional public service obligation of serving communities which can only be served at a loss. . . . The proposals must be judged on their ability to meet the transportation needs as a whole."

The Board agreed (who could, in fact, disagree?) that lower fares will bring into existence an additional travel market. But this new market represents potential revenues to existing carriers which will be available to the lean routes and poorer traffic cities.

"If the potential revenues are to be diluted by the participation of too many carriers, attainment of this objective would inevitably be thwarted. We cannot escape the conclusion, therefore, that the introduction of new carriers, operating unlimited air coach services as here proposed, would constitute a serious threat to the future orderly progression toward cheaper air transportation for the nation as a whole."

We consider it highly significant that the Board takes the position that, if present trends continue, "the low-fare service could in time become the standard service of the leading routes of the nation." We have argued that point on this page many times in the past. The goal of CAB and industry should be toward (1) reduction in dependence on mail pay and (2) an over-all reduction in the basic fare structure. These two goals, and not the institution of a few long-haul gravy routes benefiting a few areas of population and a few opportunistic operators, will benefit the masses.

Reassurance on Jet

THE chairman of United Aircraft Corporation, Mr. Frederick B. Rentschler, is a man who speaks out only infrequently and when he does speak out, he has something to say. Few indeed would challenge his position as one of the shrewdest thinkers and analysts in world aviation.

In 1946 Mr. Rentschler predicted in the face of a great deluge of jet promises from England that for the next five years at least, running into 1951, the world's commercial transports would be powered by piston engines, and that very likely piston-engined transports would hold an important position on the world's airways for a subsequent five-year period, carrying into 1956.

The other day Mr. Rentschler unburdened himself in another one of his infrequent appearances before the press. He hasn't revised his opinions of five years ago.

In commercial aviation, the piston-engined transport will continue to be the workhorse of all the world's airlines through 1956, he said. A limited number of jet-powered transports will be operational "but it is fleet replacements which we are discussing here. It is also our judgment that piston-engine-powered transports will continue in substantial operation up to 1961, at least."

His meaning is quite clear. Jet-powered transports such as the British Comet will get a tremendous amount of attention throughout the world. They will fly on the blue ribbon routes. But a relatively small handful of jet-powered transports can't dominate the world traffic nor can they make more than a dent in replacing aircraft fleets. Mr. Rentschler doesn't believe American operators will be in a position to know what they want—jet or propeller-turbine—for another three years at least, and this means the beginning of fleet replacement "some time after five years."

But Mr. Rentschler had much more to say about the position of Britain vs. the U. S. He made a clear-cut statement that the U. S. is actually ahead of the British in jet design and engineering. Virtually everything that has been coming out of aircraft and engineering circles in the past five years indicates we are catching up with the British but that the British still have the edge. Mr. Rentschler makes it clear that he believes the U. S. is now ahead—and his judgment will hardly be disputed.

We congratulate Mr. Rentschler on speaking out as he did. While no one questions that jet power is the coming thing in air transport, the ballyhoo has been very loud and somewhat premature. Jet transport must await the right power plants and these are only now in the making. Meantime the U. S. air transport industry has committed itself, wisely, to an expanded program based on piston engines. When the development program reaches the right stage, the U. S. aviation industry will build the airplanes. And we suspect the world's airlines, as a whole, are waiting for just that.

WAYNE W. PARRISH

Letters

Letters should be addressed to The Editor, American Aviation Magazine, 1025 Vermont Ave., N.W., Washington 5, D. C. Anonymous letters will not be printed, but names will be withheld upon request.

Positive Approach

To The Editor:

The article "Major Cities Face Anti-Noise Drives" in the Oct 15 issue deals with a very timely problem and one that had best not be dealt with as lightly as the last sentence of the article tends to imply. To say ". . . but noise nuisance problems will continue to crop up here and there, and the industry will have to deal with them as best it can" doesn't close the issue for even the time being.

Pilot cooperation and traffic pattern modification are good steps as far as they go. However, they all appear to be of a "defensive" nature and do not appear to indicate a full evaluation of the problem to one who has always followed the "When in doubt, attack!" line of thought. That is, what is being done to advise the local citizens of just how much their air terminal means to them (noise and all) and how its removal or absence would affect their community?

The Boeing Airplane Co. recently realized that perhaps its Seattle neighbors could be enlightened somewhat as to what the Boeing Co. means to them. It is difficult for an operation the size of Boeing's to operate within the city limits, airfield included, without making some people unhappy and they were the first to realize it.

Good Neighbors

Their "attack" was a positive one aimed at "becoming better neighbors" through good sized newspaper ads showing what the Company has grown to mean to Seattle and how it affects each resident as an individual. The fact that few citizens were in the market for a B-47 did not rule out the need for contact on the individual level. A different theme in each ad touches on such subjects as employment created, the effect of payroll on local business (especially small business) and revenues to the municipality through taxes. Other possibilities are growth of the locality due to the favorable effect on related industries, demand for housing that results in real estate development and the company's contribution to national defense.

A recent crash of a bomber after take-off on a test flight achieved national headlines when it struck a dwelling but not a word from the local press or "Letters to the Editor" column demanding that test work be moved to a more remote location. On the contrary, the runway at Boeing Field is beng lengthened to handle the test work on the nearly completed B-52. This required the acquisition of additional property and the cutting off and re-routing of a heavily traveled thoroughfare causing no small amount of inconvenience to the motoring public. Still not one squawk in the press has come to my attention. It appears that Boeing is succeeding in "becoming a better neighbor" without finding it necessary to defend its acts on a public scale in court.

The large air terminals in heavily populated areas have waited too long in taking some aggressive and positive action to justify the inconvenience they inflict on the residents of the local community. As all traffic at Boeing Field is not directly connected with national defense so all traffic at La Guardia and especially Newark is not commercial air transport. A large terminal serves many purposes and has a bearing on every individual in the community. Some of the reasons mentioned in the Boeing instance apply as well in this case. Who can deny the favorable effect that rapid air transport has had on the economic development of the communities it serves? Or the importance of a landing field so close to the shipping facilities at Port Newark that serve our armed forces overseas?

Silence Impossible

Anyone who has ever enjoyed the convenience and satisfaction of receiving or sending an air mail letter should be made to realize that the mail does not fly on silent wings. Individual instances of the part the airport has played in some humanitarian act particularly where some local resident was involved should not be allowed to go unpublicized. Good taste should, needless to say, prevail in all such cases. We, who are connected with the industry, can think of many reasons why Newark can no longer do without its airport (noise and all) or Washington, or Alexandria, without its airport but let's let the citizens whose peace is being disturbed in on the secret.

Since airplanes will continue to use the airports in question as long as they are open and operating it becomes the responsibility of airport management, or the New York Port Authority, in Newark's case, to diplomatically quell the clamor and thus stay in business. This means action other than allowing the problem to go to court for that inevitable favorable decision, then ramming it down the residents' throats.

All that has been said on the "defensive" aspects of dealing with this problem will undoubtedly improve the situation. However, if we're going to win this game let's get started with an "offensive" and on the individual level.

STEPHEN TRITASK, Lieut. USNR
NAS Seattle, Wash.
(Military leave NAL)

More on Saigon

To the Editor:

As a French citizen residing in Saigon I am taking the liberty of sending you my impressions regarding "En Route" published in the August 6 issue of AMERICAN AVIATION which I occasionally read at the reading room of the American Legation. I must tell you that I was amazed to see so many mistakes contained in such a short story.

First of all, unless the big Mekong River changed its course since last August, it lies now some 100 kilometers south of Saigon. This city spreads along the Saigon River. Then, from the latest report, the population varies between 1,500,000 and 1,700,000 as it is impossible to consider separately Saigon and its immediate surburb CHOLON (one zero must have been left over in your pen).

I would like to have your opinion on the following: how could 22,774 private cars, 6,621 trucks, 1,364 buses, 6,604 motorcycles and 105,199 bicycles and rickshaws move daily about town on unpaved streets?

Ranks Seventh

I have spent some time in gathering several official figures (like the ones stated above), to give you an idea of the importance of Tan Son Nhut airport which occupies the seventh rank among all the airports of France and the French Union for passenger traffic and which comes ahead of all of them for freight:

	Monthly average incoming and outgoing passengers	Monthly average freight
1950	10,000	900 tons
1951	14,000	1,500 tons

The above figures of course do not include the very intensive military traffic.

Having travelled as you must have around the world, transient passengers are in fact almost considered "as criminals" even when arriving at Idlewild which, as far as my own experience is concerned was the worst treatment I have ever encountered.

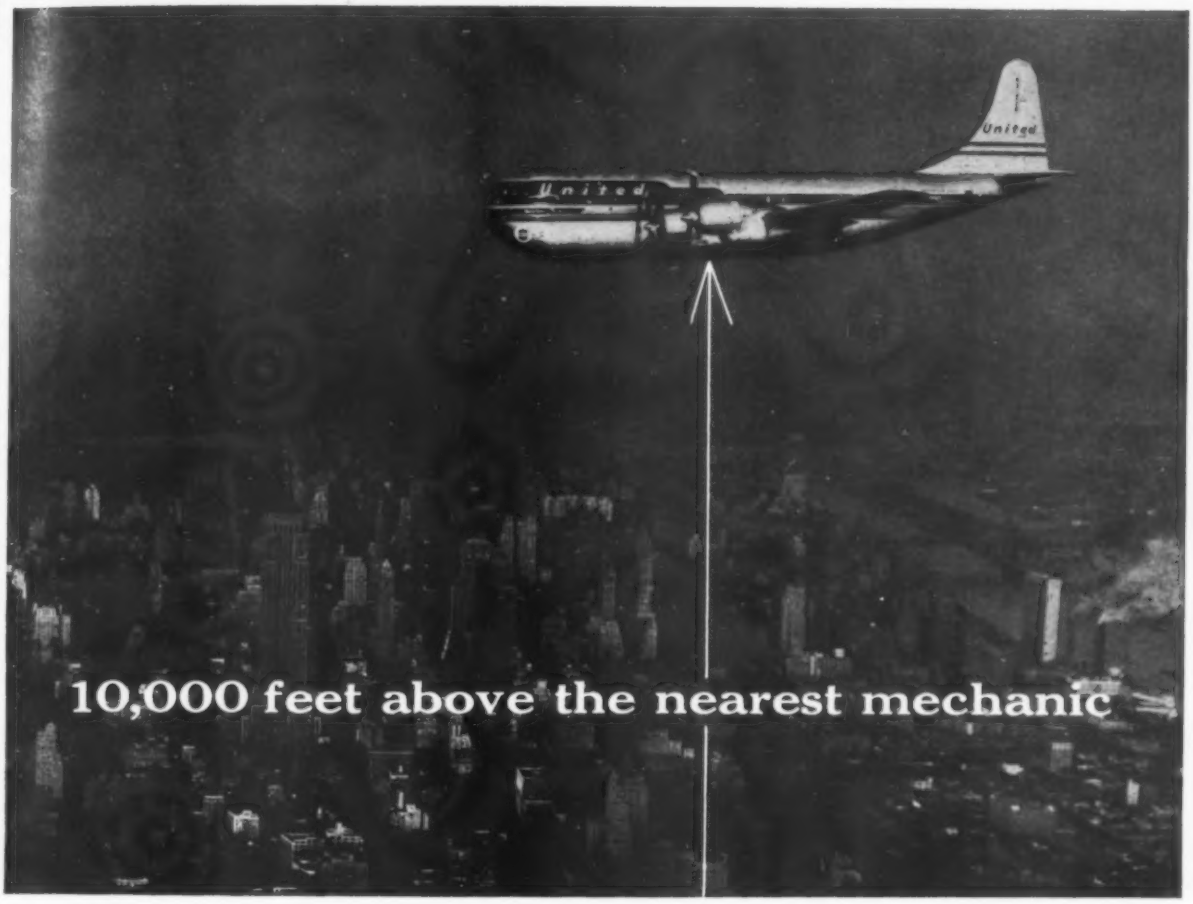
I agree that a crowd of some 20 passengers made of French and Vietnamese citizens make a very picturesque scene as far as clothing and hats are concerned when boarding a C-47, but what does a crowd of typical American citizens with "Far-West" hats and slashed shirts getting off at Orly or even Tan Son Nhut look like to French or Vietnamese witnesses?

However, you may be certain that such American citizens would be welcome in this "typical French colonial city of Saigon" just as they are anywhere else in France or in the French Union, and after they have been a little more acquainted with this prosperous city, their opinions might be somewhat different from yours.

It is because I have been to the States several times and that I have worked with American officials and private organizations for over ten years, and that I know of the keen sense of objectivity which usually guides the American press, that a true French citizen is writing at this time to a fair-play American citizen.

Hoping that the above will be of some interest to you.

SUZANNE GUILLOT
Saigon, Vietnam



ONCE AN AIRLINER takes off, its ground crew is soon left far below, and you can't just pull over to the side of the road if things go wrong. It's reassuring, then, to know that every vital part of the plane has been checked and put into flying order by men who know their jobs, and their responsibilities.

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3. **Service Engineering** . . . field representatives who are *authorities* on the servicing of aircraft accessories and systems.

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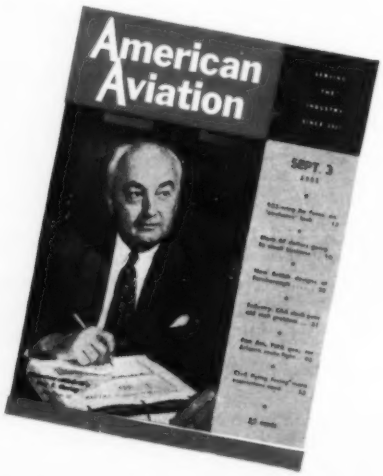
The most important companies in aviation, who know and have grown with this great industry, advertise consistently in the most important magazine in aviation . . .

Integrity

Influence



When & Where

Nov. 28-30—Aviation Distributors and Manufacturers Assn. Annual Winter Meeting, Waldorf-Astoria Hotel, New York.

Nov. 30-Dec. 5—American Society of Mechanical Engineers, Chalfonte Haddon Hall, Atlantic City, N. J.

Dec. 4-5—Transport Aircraft Hydraulic Accessory & System Conference, sponsored by Vickers, Inc., Sheraton Hotel, Detroit.

Dec. 6-7—American Institute of Electrical Engineers, Feedback Controls System Conference, Chalfonte Haddon Hall, Atlantic City, N. J.

Dec. 11-12—Air Traffic Conference of America semi-annual meeting, Carlton Hotel, Washington, D. C.

Dec. 15—National Aeronautic Association, San Francisco Chapter, "Kitty Hawk Day" Celebration.

Dec. 17—15th Wright Brothers Lecture, U. S. Chamber of Commerce Auditorium, Washington, D. C.

Dec. 17—Wright Memorial Dinner, Statler Hotel, Washington, D. C.

Dec. 17—Air Transport Association board meeting, Carlton Hotel, Washington, D. C.

Dec. 18—Air Transport Association annual membership meeting, Carlton Hotel, Washington, D. C.

Jan. 5-6, 1952—Annual Miami Air Show, Opa Locka, Florida.

Jan. 28-Feb. 1—Institute of the Aeronautical Sciences 20th annual meeting, Astor Hotel, New York.

Jan. 29-31—114th National Meeting, American Meteorological Society, Roosevelt Hotel, New York.

March 3-5—Airport Lighting Technical Conference, sponsored by American Association of Airport Executives, Deshler-Wallick Hotel, Columbus, Ohio.

March 3-6—Institute of Radio Engineers, Waldorf Astoria Hotel and Grand Central Palace, New York.

International

Nov. 26—ICAO, FAL, 3rd session, Buenos Aires.

Nov. 26—IATA Technical Committee, "Evaluation of Decca," London.

Nov. 27—IATA Traffic Committee and Joint Traffic Conferences, Nice, France.

Dec. 3—IATA Technical Committee, "Short Distance Navigational Aids," London.

Dec. 6—IATA Technical Committee, OPS Sub-Committee, 3rd meeting, London.

Jan. 22, 1952—ICAO, PEL, 4th session, Montreal.

When the "bacon and eggs" come by air...

• When heavy snows close Montana roads, ranchers in the vicinity of Miles City know they won't have long to wait before food is on the way by air. Flying supplies to snowbound ranchers and dropping feed for marooned livestock is one of the services performed by pilots who base their ships at bustling Miles City Airport.

Planes of non-scheduled airlines and flying ranchers are among the 600 ships using the field's 5,600-foot hard surfaced runways and paved taxi strips every month. The field also boasts a complete lighting system, a weather station—and *Standard Skyway Service*. Miles City Aero Service is a 'round-the-clock operation with maintenance facilities to handle everything from light planes to C-46's. Manager Sig Ugrin reports, "We depend on Standard Oil Aviation Products 100 percent. That's one reason our customers know they can depend on Aero Service."

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STANDARD OIL COMPANY (INDIANA)

B.F.Goodrich

Rubber boot cushions a fuel line's kick

IN THE FLYING BOOM—Boeing's new device for high pressure mid-air refueling—the gasoline sometimes has to be shut off suddenly at the nozzle. This posed a problem to the designers because the surging fluid would deliver a thumping kick to the pipe—like turning off a water faucet too quickly. Damage to the mechanism might result.

Boeing engineers had an idea on how to cushion the jolt. It was a section of perforated metal fuel line, surrounded by a surge boot—one rubber sleeve inside another with an air chamber between them. The pressurized air within the boot would provide the cushion to absorb the kick.

The only hitch was . . . could a boot be made that would do this job? They came to B. F. Goodrich for the answer. It had to be light in weight, yet strong enough to take the impact of the surging fuel. It had to remain flexible at low temperatures. It had to be fastened to metal end-fittings with an air-tight, liquid-tight seal.

B. F. Goodrich engineers went to work on the problem. They came up with a new material for the envelopes—man-made rubber on nylon fabric. It is light in weight and does not stiffen from cold. They found a way to form a 100% effective seal between the sleeves and the end-fittings. The whole assembly weighed only 15 pounds.

Put to the test, the new BFG surge boot did the trick, prevented damaging kicks to the fuel pipe. It's another example of the effective solutions to aviation problems developed by B. F. Goodrich engineering and research. *The B. F. Goodrich Company, Aeronautical Division, Akron, Ohio.*

B.F.Goodrich
FIRST IN RUBBER

ESTABLISHED JUNE 1, 1937

American Aviation

VOLUME 15 NUMBER 26

Air Force Shifting Concept of Air Power

Mobile air lift from U. S. bases is emerging as key AF function in all-out approach to world peace.

By Wayne W. Parrish

WITHIN very recent weeks a broad new concept of how to keep the peace of the world with air power has been in the making in top-level government circles.

It is the most important change of military thinking since strategic bombing was developed for World War II.

It will not mean any dilution of the vast aircraft production program now under way, but it will mean, in time, an important change of direction.

The new emphasis will be on *air lift*. Top policymakers are finally swinging around to an all-out approach to world peace via mobile lift from central bases in the U. S.

It means that the Air Force, which has kept its sights limited despite an enlightened policy on strategic air power, will broaden its operations in line with its responsibility for keeping the peace. It will occupy the same relative position in the world that the British Navy occupied for a hundred years, and will be supplemented by the U. S. Navy's own carrier striking force.

It means that instead of building up huge, costly, permanent military establishments in all parts of the world surrounding the Communist areas, there will be a greater trend toward keeping our major strength at home but having it in readiness to use anywhere in the world on short notice. This represents the culmination of very drastic changes in thinking on a high level within recent months and which have crystallized only in very recent weeks.

Sights Changed

Air lift has been the biggest gap in the USAF concept of air power. It is shortly to be filled in a big way. The USAF was preparing for major strategic bombing of a major power, but the need for this may or may not come. It was not preparing for the sort of limited operation which occurred in Korea and which is likely to occur many times in many places in this new kind of cold war directed by the USSR. It was not prepared for mobility or for follow-through and had under-estimated its own new responsibilities as the No. 1 medium for keeping the world peace by an ability to prevent or to put out sparks in all parts of the world.

MAJOR PROPONENT of new air lift policy is Defense Secretary Robert A. Lovett.

Here are the two big coming developments as a result of practical hard-headed policy revisions within recent weeks:

1. Big Planes for Lift. Most of the studies leading to greater use of air lift have been based on existing airplanes which are actually in most cases modifications of military types. (Only the Fairchild C-119 and the Chase C-123 are original military transport designs.) New thinking now visualizes really big heavy lift jet or turboprop powered cargo airplanes. Not just a few, but many hundreds and eventually thousands. Large turboprop flying boats which need no land bases are coming strongly into the picture.

2. The DC-3 Replacement. No agency has been more negative about developing small transports—the replacements for the utility C-47's—than the Air Force. But with all of the new postwar developments, airmen have finally conceded that the C-47 is an essential backbone of the Korean war and that it is high time, in fact late in the day, to plan large-scale replacements of the C-47's with similar but improved and rugged twin-engined heavy-lift small transports. The Air Force will soon pick up the ball.

How it Started

Here is the background of how this new and encouraging trend in high-level thinking has come about:

1. A major shift in command of the Defense Department came with the retirement of General George Marshall. The new Secretary of Defense, Robert A. Lovett, is not only a very practical, sound administrator, but is a strong believer in the full use of air, i.e., the essential value of *lift* in conjunction with aerial striking power. He is being credited with being the major factor in the new trend of Pentagon thinking. General Marshall was a foot soldier in thinking and tradition, despite his concessions to air power. Lovett understands where Marshall did not.

2. Many airmen have long advocated what the policymakers are now moving toward. Lt. Gen. Harold George, retired, war-time commander of the Air Transport Command, and C. R. Smith, now president of American Airlines but during the war General George's top deputy, have long pushed for recognition of full air power by the AF. So also have Lieut Gen. Laurence S. Kuter, who until a few days ago was commander of Military Air Transport Service; Gen. George E. Kenney, retired; former Undersecretary of Commerce Delos W. Rentzel; former Assistant Secretary of Commerce John Alison; Maj. Gen. William H. Tunner, and many others.

3. Top Pentagon policymakers, along with others charged with the country's defense, have become increasingly concerned about the tremendous cost of arming both ourselves and the western world, and the maintenance of permanent, costly bases all around the globe. Privately, the admissions have been made that the task is next to impossible without breaking the nation financially. There is and will be growing criticism of keeping large numbers of U. S. soldiers abroad. Not only that, *there is no assurance that the men and equipment will be located where they will*

DOUGLAS' AD-5, newest Navy Skyraider, is practically a dozen attack types rolled into one. A universal 'chassis' and a packaged conversion kit facilitate quick, easy changes from one combat role to another, or from photographic or tow-target plane into ambulance, transport or any of several radar types. AD-5, soon to go into production, has a Wright R-3350-26W engine, carries an 8,000-lb. warload of bombs, rockets and torpedoes. The craft is reported capable of carrying six or seven passengers. Douglas will continue delivery of AD-4's to the Navy until the new AD-5 can be incorporated into the production line of the company's El Segundo Division.

be needed at the right time.

4. There has been a growing appreciation of what the British Navy really did for a hundred years up to World Wars I and II. It was fully armed. It both prevented and put out fires constantly. It was a mobile striking force available for use almost any place, any time. Today responsibility for keeping the peace has passed to the air.

But the Air Force concept of its responsibilities was too narrow—and its facilities too deeply anchored at fixed bases. It lacked true mobility. It was thinking too much in terms of strategic striking power at enemy bases but wasn't prepared for follow-through and, what is more important, not prepared to cope with small wars which did not directly involve a major enemy.

Lift Overlooked

Korea is an A-1 example of this. The USAF can't strike at Russia when Russia isn't officially and directly involved. Strategic air power is thus only one phase of true air power, and the USAF has largely overlooked *lift* as the prime element of mobility to meet any situation that might arise anywhere.

5. After World War II, studies were made for aircraft requirements to move a single division. These plans called for a fantastic number of transport airplanes. It is now recognized that two things were basically wrong with these studies. On the one hand, they were made on the basis of present-day transport planes. On the other, they involved a standard division of, say, 15,000 men.

The new Pentagon thinking involves streamlining these obsolete divisions into trim fighting forces. A new air division, for example, might comprise 4,000 or 5,000 men at most, plus equipment. Supplies could follow in short order. With bigger and better (and much faster) airplanes, the requirements come down to something reasonable and much cheaper than maintaining huge permanent bases overseas. Furthermore, the cargo planes could be put to practical use when not needed in war.

6. Jet has become a new factor in the thinking. Jet is not only faster but much simpler in that fewer men are needed to fly and maintain much bigger airplanes. Furthermore, the AF has never really set out to design planes for lift on a big scale. Almost everything to date is a make-shift or an adaptation from basic military designs. Jet will make it possible to move an airborne division anywhere on the globe in double-quick time.

7. The Navy has been an important factor in the shift of thinking. The Navy, concerned as it is with *sea lift,* has had a far greater appreciation of *air lift* and has kept up steady pressure since unification to obtain its own *air lift* equipment. The Navy, while appreciating the value of strategic air power, has been afraid that the Air Force wouldn't be at the right place at the right time to meet an unexpected contingency. The Navy pressure has finally had a healthy effect on Pentagon thinking. It has forced the Air Force into doing something about *air lift.*

8. The Army has been effective, too. As a result of World War II, the Army command was quick to realize the benefits of the airplane and the value of mobility. The Army has been doing some very progressive thinking in recent years.

9. One of the most inexplicable mysteries of the Air Force is about to get attention. The AF has depended tremendously on the C-47 transport. In Korea it has been indispensable. Yet no plans had been made for a true replacement, despite progress in other directions. One or more replacements are almost assured—but they haven't even been designed as yet. They will come. And Henry J. Kaiser is somebody to watch in this direction. His entry into Chase Aircraft was only an experiment to learn about aircraft production. Kaiser is eyeing a plane that will do everything the C-47 can do except do it a little better.

10. The trend now in progress is, in the final analysis, inevitable, as many air power advocates have known. The fabulous costs of the 1950 planning, plus growing resistance to pouring out money all over the world and keeping troops stationed overseas, plus a hard-headed realization that even with overseas bases, men and equipment might not be where they are needed in an emergency, have all converged to form a new policy of building up highly mobile, U. S.-based forces based in the U. S. (and perhaps a few other suitable places). The purpose will be to keep the peace of the world as did the British Navy. There will be air bases abroad —but far fewer than planned for earlier.

Savings Will Be Big

It is doubtful that there will be a clear-cut enunciation of this new policy at this time, but it is coming very definitely. It is on the way. It will result in some shifts in aircraft procurement, but the overall volume of work to be done won't be lessened by very much, if any. Tanks, fighter aircraft, supplies and men will be geared for mobility by air in the next five years. The savings will come in many directions other than air. In fact the overall savings will be enormous. It is the most encouraging trend in air power since the late General H. H. "Hap" Arnold put World War II aviation on a top level where it belonged.

U. S. Leads British in Jets, Rentschler Says

United Aircraft chairman points to superior engines 'on hand' as proof of American supremacy.

THE U. S. is ahead of the British in jet engine design and engineering, according to Frederick B. Rentschler, chairman of United Aircraft Corp.

In what was probably the strongest statement yet made regarding U. S. supremacy in the jet field, Rentschler scoffed at the idea "broached from the other side of the water that the British have done the creative design work while we now should content ourselves with filling our requirements and perhaps theirs by the production of superior British types.

"This is an absurd thesis."

Other points made by Rentschler in his first major statement in five years:

Transports powered by piston engines will continue to be the workhorse of all the world's airlines through 1956. A limited number of jet transports will be operational, "but it is fleet replacements which we are discussing here." Piston engine transports will continue in substantial operation up to 1961 at least.

Early indications appear to favor the propeller-turbine not only for range and economy, "factors of the greatest importance to successful airline operations," but because of its inherent operational characteristics.

3 Years for Decision

Regarding prop-turbines and jets, "three years at least will pass before we can know enough to make a sound decision." This means "there will be no start on fleet replacement until some time after five years."

U. S. airlines have indicated that their replacement needs will call for planes no smaller than present DC-6's and Constellations, and more probably with a passenger capacity from 25 to 40% greater. "This would seem to eliminate the Comet as a fleet replacement type in American service."

Supremacy in the air will continue to remain with the nation that has the most powerful and most efficient aircraft engines.

The **gain in jet engine durability** has been "general and significant."

It **is conceivable that the Russians** with German help may have a J-57 of their own under development or even a powerplant superior to it. "All we truly know is that the best Russian aircraft we have seen so far is the Mig around the Russian version of the Nene, and we also know the Russians have designers and engineers of outstanding ability."

Rentschler

Pratt & Whitney's J-57 Turbo-Wasp "has a thrust rating comparable with or superior to any engine in production or ready for production today."

The P&W T-34 propeller-turbine, now in prototype production at 5,700-hp, "is the largest single unit now running either here or abroad."

Rentschler pointed out that in 1946 he predicted that (1) commercial transports would be powered by piston engines up to 1951, and that piston-engine transports would hold an important position to 1956, (2) all new fighter planes during 1946-51 period would be built around jets, (3) jet-powered medium bombers would be in production before the end of 1951, (4) heavy bombers in the same period would use piston engines, and that jet heavy bombers would be going into production and service before the end of 1956.

Judgment Stands

"In the years that have elapsed our judgment of 1946 requires no revision today. The basis for our thinking and estimates for the decade, which has now reached its halfway mark, was our study and knowledge of powerplants.

"It has been said so often that the engine is the heart of the airplane that it seems trite to repeat it. But that fact is continuously important. It is upon the power, the economy, and the dependability of the engine that all aviation progress depends."

Until 1946, he said, British experience was almost exclusively confined to planes powered with centrifugal-type jets developing less than 4,000 pounds thrust. Recently they have developed two "excellent" axial-flow turbines, the 6,500 pound thrust Avon and the 7,200 pound thrust Sapphire. The former is in production and a new plant is being prepared to produce the latter.

"Only a few of either . . . have been built, and their use has been confined to prototype installations. Here in America, the production and use of axial-flow turbines in this same five-year period was on a really broad scale. . . . Leading American engine builders have concentrated on the problem of increased thrust and today the results are beginning to show."

The same rule of high power will apply to the prop-turbine, he said, adding that this engine "may be most important not only in many specialized Navy aircraft but perhaps for all weight-carrying long-range aircraft." The T-34 is being installed in the Douglas C-124 and the Navy will install it in another large transport, he said.

Out of these tests may come the turbine-powered commercial transport which might well be the next immediate step forward for the world's airlines."

Comet Too Small

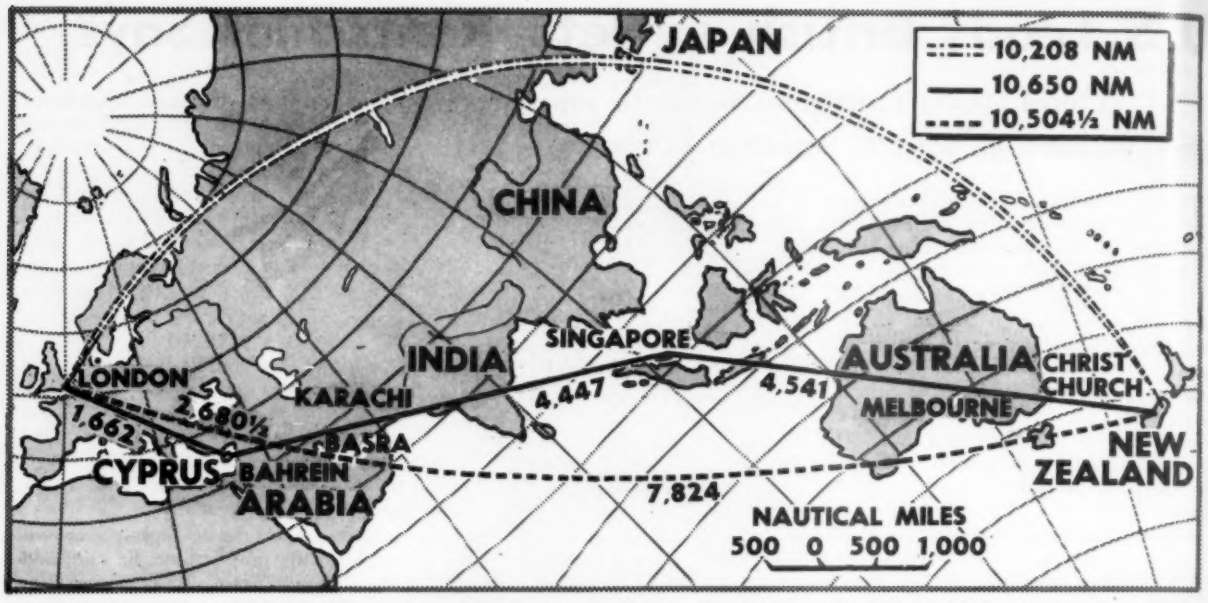
The British jet Comet, he said, is underpowered and seats only 36 passengers, which will rule it out as an American fleet replacement. This replacement will require either a jet of the J-57 size or a prop-turbine the size of the T-34. "Furthermore, with an enlarged defense program in prospect, the British capacity for producing the Comet appears limited."

Asserting that there will be no fleet replacement until some time after five years, Rentschler said he based his conclusion both on the size of the transport contemplated, the life ahead of our present fleets, and the "final proof and availability of the powerplants that will be needed.

"Looking at comparative engine development alone, it would seem that we are in a better position time-wise than are the British."

Summarizing, he said: "We are better off than most observers think. Regardless of certain unknown Russian factors, military and commercial air supremacy is still ours today.

"Comparative progress in the past five years definitely indicates our American industry has moved faster than that of any other nation with respect to engineering of both jets and propeller-turbines—and we have superior powerplants on hand as proof."



RACING HALFWAY AROUND THE GLOBE, from Britain to Christchurch, N. Z., participants will follow these alternate routes.

World's Biggest Air Race Wants U. S. Entries

12,200-mile England-New Zealand event is open to transports, all comers; prizes to total $80,000.

TWO New Zealanders are in the United States to publicize and promote an air race.

Not just an ordinary air race, mind you. This is an ambitious England-to-New Zealand air race scheduled to take place on or about October 10, 1953, a mere distance of approximately 10,600 nautical or 12,200 statute miles.

It's to be the biggest air race in the world since the MacRobertson London to Melbourne (Australia) classic of 1934. This one will be longer, unless a direct great circle route is flown.

Prize money is 30,000 N.Z. Pounds, or about $80,000 and the money is already subscribed. The Royal Aero Club of the United Kingdom has given its stamp of approval and the regulations have all been worked out to meet F.A.I. (Federation Aeronautique Internationale) requirements.

Anybody's Race

Anybody in the world is eligible and there are to be two sections, one for speed and one for transport handicap. Both landplanes and flying boats, and any individual or nation can compete.

The promoters are hoping that both U. S. manufacturers and airlines (and the military) will participate. Already there are provisional entries from the two British airlines, BOAC and BEA; from two British manufacturers, the de Havilland Aircraft Co. and the Sir W. G. Armstrong Whitworth Company; from KLM Royal Dutch Airlines, and from Qantas Empire Airways of Australia.

The two New Zealanders who called on AMERICAN AVIATION to tell about the plans are Hume W. Christie and John Stannage, who got the idea for the race back in 1946 and have been working steadily at the promoting job ever since. They have the full backing of the New Zealand government and every organization in that country.

Christie is an automobile dealer and a World War I flyer. Stannage is a famous name in Australia and New Zealand aviation and now operates a radio station. Stannage was an associate of the late Sir Charles Kingsford-Smith in some of the Australian's pioneering and world flights, and Stannage was a crew member on the first flight from London to New York in 1930.

Both men live in Christchurch, a placid and attractive city of 150,000 situated on the east coast of the south island of New Zealand.

There has always been a good deal of aviation interest in Christchurch, and New Zealand, because of its location on the globe, has always been airminded.

AIR RACE PLANNERS Hume W. Christie (left) and John Stannage (right) discuss details in AMERICAN AVIATION'S offices.

Take-off of the race will be at an airport or airports yet to be designated in England. The finish is to be at the new Christchurch International Airport at Harewood, seven miles from Christchurch.

100th Anniversary

The event is to celebrate the arrival to the day and perhaps the hour of four ships from England 100 years ago, in 1853, marking the first settlement of the area.

Beyond marking the anniversary, the purpose of the race is to further the interests of aviation in general, put New Zealand more prominently in the world spotlight, and to give manufacturers and airlines an opportunity to demonstrate and display their goods and services.

A novel idea is the handicap transport race, by which airlines can sell paid fares to passengers and participate in the race in an effort to get some of the prize money.

It's been a long time since there's been a big-time international air race. Back in 1934, the MacRobertson International Race from London to Melbourne, Australia captured the world's interest. This race was won by C. W. A. Scott and T. Campbell Black, flying a Gypsy-powered de Havilland Comet. They averaged 159.15 mph. over the 11,300-mile route in 70 hours, 54 minutes and 18 seconds.

Probably de Havilland has its eyes on the 1953 prize with a new Comet, this time a four-jet transport which ought to shave a good many hours off the 1934 record. There's no doubt that jet will play a big part in the 1953 competition.

There will be four prizes in both the speed and transport handicap sections as follows: First prize, $28,000; second prize, $8,000; third prize, $2,800; and fourth prize, $1,400.

Application forms (Form A for the speed section and Form B for transport handicap) may be obtained from the Royal Aero Club, 119 Piccadilly, London, W.I., England, or from the Canterbury International Air Race Council, Inc., 116 Hereford Street, Christchurch, N.Z. Entries must be in the hands of either club, in duplicate, not later than Jan. 31, 1953. There is an entrance fee of 100 Guineas (about $300) for each section. Conditions and general rules may be obtained by writing to either club.

There are elaborate rules for the transport handicap which permits the entrance of just about any kind of transport airplane with or without passengers. In fact the New Zealanders hope that many airlines will fly with full payloads.

U. S. Jet Transport?

It's too early to indicate what, if any, entries there will be from the U. S., but Messrs. Christie and Stannage have their hopes up. What with de Havilland anxious to show off the Comet, they hope to attract rivals from the U. S., but jet transport planes have been a little scarce on U. S. production lines of late. However, it is possible, the USAF might be persuaded to get into the race with something special in the military line in an effort to cop the speed prize.

Make those reservations early, chappies. Christchurch is a long way from here and 1953 will be rolling around sooner than you think.

CAB Air Coach Expansion Policy Unfolds

Growth of scheduled service to be fostered, but no new carriers will be authorized as 'specialists.'

By William V. Henzey

THE domestic network of scheduled air coach services is due for a vast but orderly expansion beginning early next year, according to the Civil Aeronautics Board's policy-packed decision in the Transcontinental Coach-Type Service Case.

The expansion, which is expected to result in a gradual but complete lowering of airline fares throughout the country, will not be saddled with the competition of would-be coach "specialists."

Non-skeds Rejected

Immediate impact of the decision was the rejection of four non-scheduled airlines' applications for certificates to conduct scheduled coach services over lush transcontinental routes. Long-range view envisions lower fares over currently certificated airlines.

The Board is conducting an extensive study of domestic coach operations and within the next two months will complete it and formulate a detailed policy to be followed in carrying out the expansion. But the general rules have been set and the steps will follow these lines:

- **Present restrictions on scheduled coach operations** will be generally relaxed with more "daylight" operations permitted.
- **More schedules with high-density equipment** will be added over present coach routes early in 1952, or sooner if carriers take initiative with sound proposals.
- **Coach service will gradually be extended** to new cities and route segments with the pace of such extension dependent upon the success of enlarged operations over present coach routes.

To insure the success of the expansion program as nearly as possible, CAB first had to rule out perhaps the most important bid of the non-scheduled industry—that for certificates to conduct scheduled low-fare operations.

And in so doing, it clearly indicated that the national public interest cannot be subjugated to the interests of a limited number of people or to isolated geographical areas.

Four of the five Board members took this stand. Only Member Joseph P. Adams dissented, with the argument that "one or more" non-skeds should be given special exempetions to render a demand-type service over the transcontinental routes.

Broad View

But the majority stated that "we cannot confine our vision to a keyhole view which would reveal the present proposals as an isolated problem of significance only to the applicants and the limited traffic they propose to serve and with no implications to the national air transport system as a whole, whose sound economic development is a matter of public concern."

The ruling affected only the non-skeds' bid for authority to conduct "unlimited operations." Their requests for less than unlimited operating rights were deferred for consideration in the overall investigation of the large irregular carrier industry which just recently got underway.

Four non-skeds which saw the important "test" case through to the finish were Air America, California Eastern Airways, Great Lakes Airlines and Trans American Airways. Eleven others dropped out along the way. But the issue of whether, as in the air freight

field, "specialists" would emerge as certificated operators, remained predominant until CAB decided the case the other day.

Basically, the Board's ruling was that coach service is a matter of pricing and not a specialized operation that requires authorization of a new class of carriers. This, they said, "poses, not a new route or new service problem, but a rate problem,—a decision as to what fares should be charged." The technological "know-how" required for a passenger service certainly does not vary with the level of fares charged or the seating density of the airplane, they said.

Lush Long Haul

In answer to other arguments, CAB also found that (1) low fares on non-sked operations are accounted for chiefly by concentration of operations to lucrative routes, minus stops at smaller and less profitable cities; (2) that diversion of such operations from certificated services would be a deterrent to the achievement of self-sufficiency for the national air transport system; and (3) that only destructive and unnecessary competition would result if non-sked and scheduled lines owned parallel certificates.

Of particular significance was the Board's concern over the air pattern which is to serve the new market. In this undisputed vast market, CAB sees not a get-rich-quick potential for a few carriers for the benefit of a few towns, but a means by which similar low-fare services may be supported and made available to less profitable cities and route segments.

Majority pointed out that if the potential revenues are to be diluted by participation of too many carriers, attainment of this objective would inevitably be thwarted. In short, certification of coach "specialists" would constitute a serious threat to the future orderly progression toward cheaper air transportation for the nation as a whole.

In fact, CAB indicated that today's scheduled coach services, under orderly development, could well become the standard fare service of the industry. With this goal in mind, the government agency said it intends to use its full statutory powers to insure that the present trend along these lines continues.

Currently, nine of the sixteen domestic scheduled carriers operate limited coach services over selected routes such as California-New York, Chicago-New York, New York-Miami, Chicago-Miami, Los Angeles-San Francisco and New York-New Orleans. These have been developed during the past three years under a carefully controlled experiment. With only a few exceptions, they have been limited to late-night departures so as not to interfere with first-class revenues.

Fare level for current scheduled coach operations is approximately 4.5c per passenger-mile. For standard-fare service, basic industry fare averages 6.1c per mile. From an economic standpoint, the carriers and CAB have attempted to produce as much revenue per plane on the increased-seating arrangement of coach flights at the lower fare as would be produced at average loads on standard flights at the higher fare. In 1950, these limited services resulted in total revenues of over $43 million to the scheduled coach operators.

Now, CAB has signalled a new era in the experiment and the pace should be stepped up very shortly.

Generally, the reasoning is that a large part of the domestic airline industry, by virtue of today's heavy traffic volume, is in a position to experiment further with low-fare services without serious risk to its financial welfare or to the federal treasury and, CAB says "we expect them to do so."

Board feels that a successful expansion of coach operations will, because of increased traffic volume and resulting lower unit costs, bring about an eventual reduction in the extent of dependence upon mail pay and contribute to the advancement of the day when the industry will become self-sustaining.

CAB Vice-chairman Oswald Ryan, in a speech before the Lawyers' Club of Atlanta recently, said that "the further development of our air transportation system requires a broadening of the potential traffic base, and the key to this development is lower fares."

In all, these expressions indicate clearly that the CAB intends to push hard for a lowering of the standard air fare of the nation through expansion of air coach services. While some lines may be compelled to take action in this program, there are several that are literally bursting at the seams to put on more coach flights. If an orderly procedure is allowed to be maintained, domestic airlines may soon be in the mass travel market.

International Air Coach Outlook

On the international coach front, the Civil Aeronautics Board informed U. S. members of the International Air Transport Association that it strongly supports inauguration of a trans-Atlantic tourist service next spring at basic New York-London fares of $265 one-way, $397.50 off-season round-trip, and $477 on-season round-trip. Previously, Pan American, leading airline advocate of early inauguration of the service, had pushed for a $225 fare.

CAB's position was stated to the U. S. carriers preliminary to participation of the lines in the forthcoming meeting of IATA Traffic Conferences 1 and 2 at Nice, France, November 27. It was arrived at after informal conferences with the carriers. Trans World Airlines, the other U. S. flag carrier flying the Atlantic announced it favored the fare structure proposed by CAB and would support moves to start the service next April 1.

Several months ago, Pan American indicated it would begin trans-Atlantic coach flights next spring, with or without other IATA members. But general agreement on CAB's proposal at the Nice meeting would eliminate this possibility. Two previous IATA meetings in the past six months failed to settle the important inauguration date and fare issues. Generally, the fare picture may be seen in the following table of New York-London fares:

	Tourist Fares			
	Current CAB Proposal	CAB 6 Months Ago	IATA 6 Months Ago	Prevailing Standard Fares
One-Way	$265.00	$225.00*	$225—250	$395.00
R.T. Off-Season	397.50	405.00	.....	525.40
R.T. On-Season	477.00	405.00	.....	711.00

* Minimum fare.

The current CAB proposal is based on representative costs submitted by IATA and, at a year-round load factor of 68%, would meet the break-even need and provide a reasonable element of profit for coach operations, according to Board thinking.

As in the domestic field, CAB and the U. S. IATA members are pushing for high-density aircraft to be used in coach service, with Boeing Stratocruisers, Lockheed Constellations and Douglas DC-6's coming under consideration.

ARMY'S H-23B, built by Hiller Helicopters, incorporates 54 major engineering modifications of the older Hiller H-23A.

Hiller Builds New Helicopter for Military

H-23B, now in quantity production, incorporates design changes based directly on Korean experience.

THE new H-23B, first Hiller Helicopter specifically designed for military service, is now in production and coming off the assembly lines at a "good rate."

Described as an almost entirely new helicopter, H-23B is the result of 54 major modifications of the H-23A, military version of the commercial Hiller 360. Beefing-up process, from which resulted the new rotorcraft which is capable of meeting military requirements, consisted primarily of addition of a larger 200 hp Franklin engine, new skid gear, new transmission, new body, new tail sections, new electronic system, new controls, and new cockpit enclosure.

Tough Usage

Need for a military helicopter became apparent when it was found in Korea that commercial helicopters, hurriedly converted and rushed into service, were not entirely satisfactory. Some of these craft, equipped with automotive and standard aircraft parts, could not stand up under the constant use required by the military. Some of the converted commercial craft, moreover, also carried 400 extra pounds of military equipment, making them underpowered and overloaded.

Plans for production of a helicopter embodying performance requirements based on Korean experience stemmed from an engineering conference held early this year, when major modification of the H-23A was decided upon. Following the meeting, a "large order" was awarded Hiller. First H-23B was completed during the summer of this year, with quantity production now being achieved.

All design changes were not incorporated at one time. In order to keep production rolling, changes were incorporated into the system from time to time, with the result that the last H-23A's coming off the line were considerably improved. These craft, in which some but not all major engineering modifications were incorporated, might be considered H-23-B-minuses or H-23A-plusses.

H-23B COCKPIT makes flying easier.

Tests on the new H-23B's have now been completed, and the craft has been approved by the CAA.

H-23B Specifications

	H-23B
Weights:	
Gross	2500 lbs.
Empty	1756 lbs.
Useful Load	744 lbs.
General Dimensions:	
Construction	all-metal semi-monocoque
Fuselage Width	4.9 ft.
Length	38.7 ft.
Height (cabin)	5.88 ft.
Height (rotor)	9.7 ft.
Cabin Dimensions:	
Width	4.9 ft.
Length	4.4 ft.
Height	4.1 ft.
Power Plant:	
Make	Franklin 6V4-200-C33
Normal Rated Power	200 HP @ 3100 rpm & SL
Fuel Capacity	28 gal.
Main Rotor:	
Diameter	35 ft.
Number of Blades	2
Disk Loading	2.6 lbs. sq. ft.
Anti-Torque Rotor:	
Diameter	5.5 ft.
Number of Blades	2

JAT SYSTEM combines year-round and seasonal operation with pooled services.

JAT Re-Establishes Ties With the West

Jugoslovenski Aerotransport faces bright traffic outlook despite current operational difficulties.

By WAYNE W. PARRISH

WESTERN Europe has a new airline in its camp and I had the pleasure of flying 2,000 miles on it recently.

The airline is Jugoslovenski Aerotransport, or Yugoslavian Airline, commonly know as JAT which is pronounced like "Yacht."

It wasn't very long ago that JAT was operating behind the Iron Curtain and was chiefly concerned about traffic and connections with the airlines of the U.S.S.R. satellite countries. But all of a sudden, all connections with the east ceased; today, JAT is busily engaged in rebuilding fences and making interline agreements with the airlines of Western Europe.

Improved Conditions

When the Iron Curtain moved eastward, JAT had to change its entire traffic outlook. Needless to say, it is doing much better now that it has traffic outlets into Western Europe.

JAT has joined the International Air Transport Association and had delegates to the annual assembly in London last September. It has 16 DC-3's in passenger service and three C-47's for cargo. All of these are U. S. types—no Russian-built DC-3 types are in service today. The equipment was purchased as surplus since World War II.

Formed in 1946

JAT isn't the first airline for Yugoslavia. Before World War II there was Aeroput, which operated to many points in Europe. Then came the war which wrecked airports and all equipment. Later, the military began operating a makeshift transport service, and in 1946 JAT was formed as a government-owned airline. It operates within the ministry which directs all of the country's transportation.

Like many airlines, JAT has a seasonal problem but it isn't lack of year-round traffic which makes the problem. It's operations. Bad flying weather accompanied by strong winter winds off the Mediterranean, combined with very rugged terrain and few suitable airports, force JAT to close down seven of its 12 internal routes from the beginning of rains in September until early summer.

Seasonal Service

The rains had already started down south when I was in Yugoslavia, so I couldn't get to the picturesque Dalmatian coast town of Dubrovnik. Air service won't resume there until late spring. The airfield there is small, and soggy and unusable except in the summer. But I did fly in and out of Zagreb three times, and to Rijecka and Split. Those fields aren't anything to brag about, either. Zagreb is turf, which gets pretty soft and muddy during rains, and the other two have stone base but are short one-way fields in valleys.

The only paved runway in Yugoslavia, at least the only one available to the airline, is at the capital, Belgrade, where much of the time the wind is at an angle, with the result that most of the flying is done from the turf area. Only in the rich agricultural valley which runs south from the Austrian border through Zagreb to Belgrade are there suitable airport areas. Along the coast and the remainder of the interior there is hardly a spot anywhere for a good airport. The terrain is very rugged throughout most of the country.

Navigation facilities are on the meager side, but DF installations are about complete everywhere. Even with the best navigation facilities, however, JAT won't be able to operate with year-round reliability for a long time. Better air-

Slivovitz

Yugoslavian Airline has one unique feature of its passenger service that's worth bragging about, although first-riders from outside the country may get the jolt of their lives. Right after take-off on all flights the stewardess comes up the aisle with a tray of *slivovitz*. This is plum brandy, the common drink of the country, but it looks like vodka or Danish aquavit and has a take-off jolt equivalent to that of a rocket. JAT serves no coffee on the early morning flights so the jigger of *slivovitz* may be somewhat frightening to the uninitiated. Two jiggers and JAT guarantees you'll enjoy the flight. You'll even want to help the stewardess serve passengers and help the pilot fly the airplane. Not as strong, actually, as aquavit, *slivovitz* is one of those things you can get accustomed to in a few days. The muddy Danube flowing by Belgrade actually begins to look blue—everything seems just wonderful. Other airlines might well copy this simple method of making all customers satisfied.

ports can and will be built, but the construction job is terrific. Meanwhile, domestic service has to exist principally in the summer. The country is a little larger in area than the state of Wyoming in the U. S. and has about 16,000,000 population.

For this reason among others, JAT is making desperate efforts to expand its international services. It now operates three times weekly to Frankfurt, Germany, with weekly stops en route at Munich and Linz. It operates once weekly from Belgrade to Zurich in pool with Swissair. A similar pool exists with TAE, the Greek National Airlines, between Belgrade and Athens. JAT wants to fly to Paris and it will fly to Italy whenever the Yugoslavian and Italian governments can agree on routes and frequencies.

Traffic High

JAT is very proud of its year-round load factor, which this year up to mid-September had been 86%. It schedules tightly and traffic demand is high on most routes.

Few airlines in the world offer such contrasts with surface travel. By train it is 860 kilometers and 48 hours from Belgrade to Titograd, but it's only 300 kilometers and an hour and a half by air. It's a 48-hour train journey from Split to Belgrade, but less than an hour and a half by air. Roads in many parts of the country are very poor. The rugged and irregular terrain makes rail travel tedious.

Since all buildings on Zemun airport at Belgrade were destroyed in the war, JAT's maintenance facilities are something less than ideal. There is only one hangar, just big enough for a DC-3, and it is used for other purposes during the summer. In winter, JAT overhauls the planes one at a time. All other maintenance work is done on the outside. The engine shops in temporary structures are modest, but the airline keeps its Pratt & Whitney 1830's in excellent condition. The instrument shops would be considered quite inadequate by U. S. standards, but gradually JAT is building up its facilities. JAT does the best it can with what it has. It buys DC-3 and engine parts from a New York firm.

JAT has converted several of its DC-3's to 28-passenger versions, using a plywood interior which is both attractive and unusual. In due course it will convert the entire fleet in this manner. Most of the existing fleet have 23 seats and a few have 21.

The day's operations begin after 7 a.m. and end by 9:30 p.m. There are quite a few after-dark arrivals. Lighting at the fields is adequate, but nothing to brag about.

The JAT Record

	1950	1951 (to Sept. 15)
Aircraft Miles Flown		
Domestic	847,598	
International	350,243	
Total	**1,197,841**	**1,125,000**
Passengers Flown		
Domestic	81,379	
International	5,176	
Total	**86,555**	**71,000**
Passenger-Miles Flown (approx.)	**20,625,000**	**17,500,000**
Cargo In Metric Tons	**699**	**55**

Officials and Headquarters

General Offices: Bircaninova 1, Belgrade, Yugoslavia
General Manager—Bozovic Jovan
Asst. Gen. Mgr.—Vukovic Drago
Sales & Traffic Mgr.—Rajcevic Velisa
Asst. Sales & Traffic Mgr.—Nikolic Dragomir

Operations and Maintenance: Zemun Airport, Belgrade
Operations Mgr.—Andjelkovic Ratomir
Chief Engineer—Todorovic Branislav

The main JAT offices are in the government transportation building in downtown Belgrade, a large stone structure, and are open, as are all offices, from 7 a.m. to 2 p.m. daily. Work starts early in Yugoslavia and goes on without a break until 2 p.m. when everybody goes home for lunch. There is no later resumption of work for the day.

600 Employes

There are 600 employes of the airline, plus other personnel assigned to crop dusting.

The JAT officials are ambitious to expand their airline and to work more closely with foreign carriers. Pan American Airways, which is certificated for Belgrade but can't stop flights there because of airport restrictions, is very highly regarded by JAT. PAA has helped the Yugoslavs on many occasions. In return, JAT has plastered PAA travel posters all over the country. The relationship is quite beneficial to PAA because there is an increasing amount of through traffic connecting at Frankfurt. Yugoslavs have many family connections in the U. S.

What the JAT officials think they want is a DC-6 or two for operations to Paris, Athens and other points, but, because of currency and other problems, it is not likely they'll get this type of equipment soon. A Convair or two would probably prove more satisfactory. But the Belgrade airport must be improved and better maintenance facilities established. JAT, responsible for all crop dusting, spraying and aerial photography, has a miscellaneous fleet of planes for these purposes, and is anxious to obtain more information about helicopters and agricultural aviation.

I was received by JAT with the greatest of courtesy and hospitality, although the limited English spoken by JAT officials is a handicap to elaborate conversations. Only one staff member, Asa Marberger, speaks and reads English well. He acts as interpreter at meetings with people from the ouside. French or German is spoken by a number of top officials.

But JAT officials can read English, slowly, and have an avid interest in publications from the U. S. I was pleased that JAT knew well of AMERICAN AVIATION. In the operations manager's office I found a neat pile of our magazines in a bookcase. From questions asked about articles we've run in the past few years, it was obvious that they had read magazines very carefully. They asked me to send them various technical literature and up-to-date information on such things as the DC-6 and helicopters, and I have dispatched quite a bit of material so far.

Party Supervision

The top officials are not aviation men. They are loyal party members of the Tito government who are shifted from one supervisory job to another. Yet it was obvious that they are much interested in aviation.

On the level just below these men are officials who have had aviation background at one time or another. The assistant sales manager, for example, Mr. Nikolic Dragomir, is a Yugoslavian aviation pioneer.

It was difficult for an outsider to pick up any real feelings about politics, and that was not my purpose in going to Yugoslavia. But the fact that two pilots and their wives diverted a local plane to Zurich, Switzerland, to ask for asylum away from Tito's government is an indication that a dictatorship isn't liked by everybody. This aerial escape happened after I had left the country. It isn't likely, however, that this desire to escape from Yugoslavia is prevalent everywhere. Most Yugoslavians, I think, are nationalistic and like their country and intend to stick it out.

For myself, I was given complete freedom to go anywhere, do anything and talk to anybody. The difficulty with that is that my Yugoslavian is extinct.

Helpful Guide

At my specific request, JAT "loaned" Mr. Marberger to me to help me get around the country, but the government is making every effort to open the country wide to visitors and to insure absolute freedom of action. This goes for cameras, too. As a visitor, I found not the slightest restriction in any manner, shape or form, although without knowing the language, the visitor is under a natural handicap. The Yugoslavian language is pretty tough going.

JAT passenger service is good and there is a stewardess on each flight plus a crew of four—pilot, co-pilot, engineer and radio operator. If it's mealtime, you'll get salami and thick slices of coarse, grey bread, and some grapes if they are in season. (Yugoslavia is famous for its wonderful grapes). But in case you don't think this is an elaborate repast, just have a couple of slivovitz and you'll forget about the coarse bread.

Ex-Military Pilots

JAT pilots are mostly former army flyers. They put complete (and sometimes too much) faith in their engines, and sometimes are a little rough on the controls. But by and large they seemed like a capable lot of men who do a good job of flying in and out of tough fields, often with cross-wind landings and take-offs. In all except two fields, there's a mountain at the end of that runway.

Interline agreements have now been completed with Pan American, Air France, Sabena, TAE (Greek), KLM, SAS, TWA and Swissair. There is no longer any air connection with the neighboring countries of Hungary, Bulgaria, Rumania and Albania, nor with Czechoslovakia, but once weekly a Russian Aeroflot plane flies from Moscow to Tirana, capital of Albania, and makes a technical stop at Belgrade. No passengers or mail are taken on or off, however.

Yugoslavia is anxious to develop tourist trade into the country and especially to get Americans to come there. But hotels are limited both in number and quality. Travel is somewhat complicated by the requirement that all foreigners get transportation and hotels from the government organization known at *Putnik*. Taxis are few and far between; public transport is usually jammed. The vacationing tourist will find it difficult to put up with, but the adventuresome will like it. I will go into details in my *En Route* page in future issues of this magazine.

Middle Bracket

With all of its many difficulties, JAT is an interesting airline. It has downtown ticket and check-in offices in all its large cities; it provides bus transport to airports; it operates pretty much on time; it has all the appearance of a businesslike outfit. And, as its record shows, it is no small potatoes as an airline. To carry 71,000 passengers in the first nine months of 1951 puts it into the middle brackets of world airlines and, everything considered, that isn't bad.

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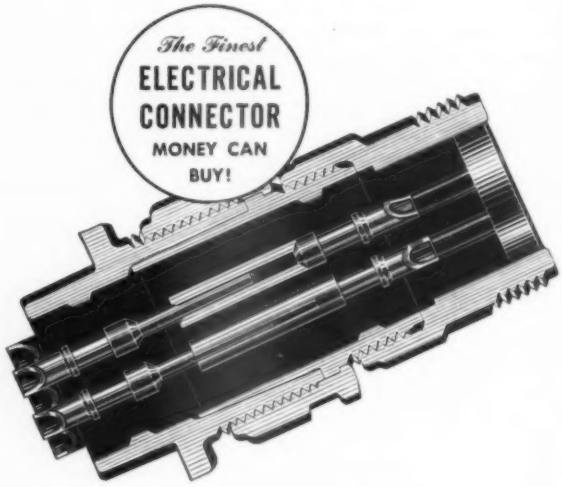

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How New Pilot Pay Contracts Compare

Domestic Operations

FIRST PILOTS

	American	Capital	Chicago & Southern	Eastern	TWA	United
Base Pay	$200 per mo. in 1st yr., increasing in $20 increments to $300 in 6th yr. and thereafter.	$2,520 per yr., increasing in $240 increments to $4,200 in 8th yr. and thereafter.	$2,200 for 1st yr., increasing in $200 increments to $3,600 in 8th yr. and thereafter.	Same as Capital Airlines.	Same as C&S.	Same as C&S and TWA.
Hourly Pay	$5.00, $5.20 and $5.40 for day flying on DC-4's, Convair 240's and DC-6's, respectively. For night flying, $7.50, $7.80 and $8.10, respectively.	$4.60 day; $6.90 night on DC-3's; $5.00 day, $7.50 night on DC-4's and Super DC-3's. $5.40 day, $8.10 night on Constellations.	$4.60 day, $6.90 night, on DC-3's; $5.00 - $7.50 on DC-4's; $5.40 - $8.10 on L749A Constellations.	Same as C&S, plus $5.20 - $7.80 for Martin 4-0-4's.	Same as Eastern.	Composite rate, including terrain pay differential of $5.25 day, $7.25 night, on DC-3's; $5.75 - $8.25, on DC-4's and Convair 340's; $6.25 - $8.75 on DC-6's and Boeing 377's, and $6.50-$9.00 on DC-6B's.
Mileage Pay	1.5c per mile for each mile flown.	1c per mile for first 17,000 miles flown in a month; 2c per mile from 17,000 to 22,000; 3c for each additional mile.	Same as Capital Airlines.	Same as Capital and C&S.	Same as American.	Same as American and TWA.
Gross Weight Pay	1¾c per 1,000 lbs. of max. cert. gross weight of the aircraft for each hour flown.	2c per 1,000 lbs. for each hour flown.	Same as Capital Airlines.	Same as Capital and C&S.	Same as American Airlines.	1¼c per 1,000 lbs. for each hour flown.

CO-PILOTS

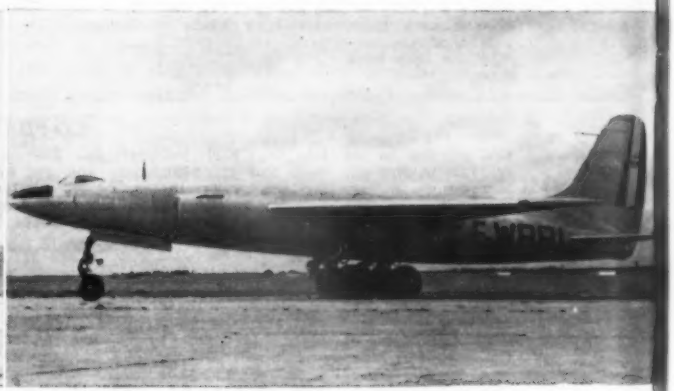
Base Pay	$350 per mo. in 1st yr., $200 in 2nd yr., increasing in $20 increments to $300 in 8th yr. and thereafter.	1st yr., $350 per mo.; 2nd yr., $400; 3rd yr., $250; increasing in $20 increments to $350 in 8th yr. and thereafter.	1st yr., $350 per mo.; 2nd yr., $400; 3rd yr, $216.66; increasing thereafter in $16.66 increments to $300 a mo. in 8th yr. and thereafter.	Same as Capital.	$350 per mo. in 1st yr.; $400 in 2nd yr.; $216.66 in 3rd yr.; increasing in $16.66 increments to $300 in 8th yr. and thereafter.	Same as TWA.
Hourly Pay	1st yr., none; 2nd yr., $1.50, $1.56 and $1.62 day flying of DC-4, Convair Liner and DC-6, respectively and $2.25, $2.34 and $2.43 for night flying; 3rd yr., $2.00 — $3.00, $2.08 — $3.12 and $2.16—$3.24; 4th to 8th yr., $2.50 — $3.75; $2.60 — $3.90 and $2.70—$4.05.	In addition to base pay, $2.10 day $3.15 night for DC-4's and Super DC-3's; $2.30 day, $3.45 night for Constellations; for DC-3 copilots, a composite rate of $2.35, $2.75, $3.15, $3.50, $3.40 and $3.20 for 3rd, through 8th yrs. respectively.	Constellation copilots after 2nd yr. get 50% of flight pay for Constellation first pilot; DC-3 copilots in 3rd and 4th yrs. get 47% of mileage pay of DC-3 1st pilots, in 5th yr. and thereafter 52%.	In addition to base pay, $2.10, $2.20 and $2.30, respectively on DC-4's, Martin 4-0-4's and Constellations, day flying; $3.15, $3.30 and $3.45, night flying; DC-3 pilots same as Capital.	48% of 1st pilots' hourly pay, after 2nd year.	35% of 1st pilots' hourly pay in 2nd yr. of service; 45% in 3rd yr., and 50% in 4th yr. and thereafter.
Mileage Pay	None in 1st yr.; .45c per mile in 2nd yr.; .60c a mile in 3rd yr.; and .75c in 4th yr. and after.	50% of first pilots' mileage pay except in case of DC-3 copilots.	Same formula as above.	Same as Capital.	48% of 1st pilots' mileage pay, after 2nd year.	35% of 1st pilots' mileage pay in 2nd yr. of service; 45% in 3rd yr.; 50% in 4th yr. and thereafter.
Gross Weight Pay	1st yr., none; 2nd yr., .525c per 1,000 lbs. gross weight per hr. flown; 3rd yr., .70c; 4th to 8th yr., .875c.	Copilots of DC-4's, Martin 4-0-4's and Constellations get ½c per 1,000 lbs. gross weight per hr. flown.	Same formula as above.	Same as Capital.	48% of 1st pilots' gross weight pay, after 2nd year.	35% of 1st pilots' gross weight pay in 2nd yr.; 45% in 3rd yr., and 50% in 4th yr. and thereafter.
Expenses (All Pilots)	Meal allowances away from base: breakfast, $1.00; lunch, $1.25; dinner, $2.00; midnight snack, $1.25.	Meal allowances away from base, or on duty at home base, reporting for duty one hr. prior to schedule departure.		35c per hr. or fraction away from base for three hours or more, away from temporary base, or assigned to company training school.	35c per hr. or fraction away from base four hrs. or more; 40c per hr. on temporary duty or assignment away from base or at co. training school.	Away from base: $1.25 for breakfast, $1.35 for lunch and $2.25 for dinner.

AN AMERICAN AVIATION RECAP of recent airline pilot contracts negotiated by the Air Line Pilots Association reveals interesting dissimilarities, particularly between two general patterns—the so-called Eastern formula and the so-called TWA formula.

SO-30 BRETAGNE, a French jet transport with about 25 hours of flying time since its first flight last March. Two Hispano-Suiza engines give it a top speed of about 466 mph. Its primary function is to obtain operating data for the design of the Champagne, a four-engined jet transport which looks very much like the Comet.

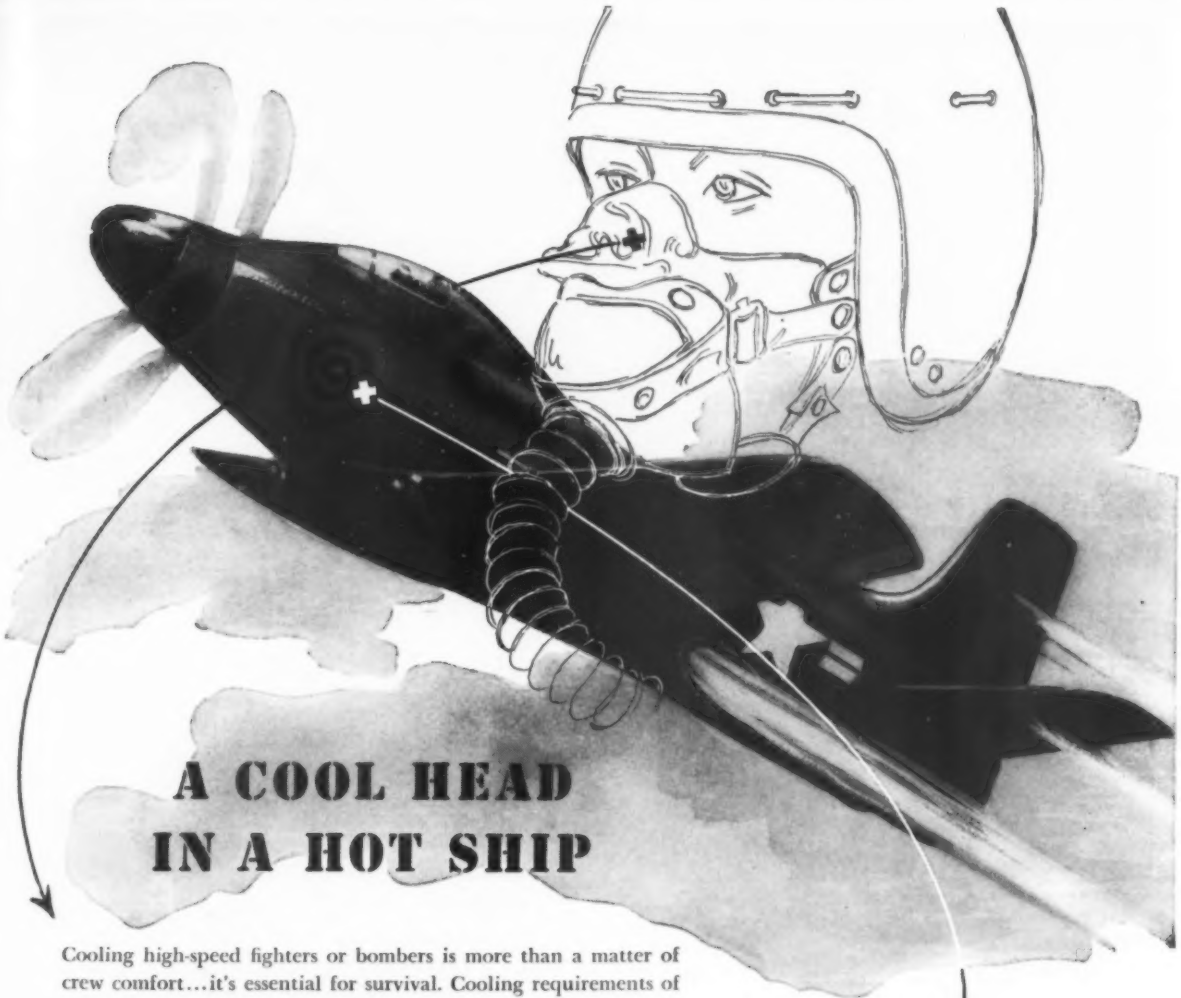
Latest French Aircraft Designs

SO-6021 "ESPADON" prototype model, latest French jet fighter design to be flown. Powered by one Nene engine, it weighs about 15,435 lbs. A later version, using rocket-assisted take-off, is now being readied for flight, and has slightly modified vertical tail surfaces. Note clamshell side air inlets in fuselage and design of wheel wells.



LARGEST FRENCH JET, the SO-4000, first flew last March at Orleans-Bricy. It has two Hispano-Suiza Nene jets of 5,000 pounds static thrust. Classified as a tactical bomber in the Canberra and Martin XB-51 class, it is the successor to the SNCASO M1 and Ma. French Atar, British Avon and Sapphire jet engines, boosting speed to about 620 mph., have been considered.

SO-1120, OR AERIEL III, a jet-powered helicopter. Its Turbomeca Artouste engine compresses and prepares fuel which is then routed to the wing-tip burners where combustion occurs. The engine and tip burners can be seen in the opening in the side of the fuselage.



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Airlines, too, are using Stratos equipment in transport aircraft such as the Constellations of Pan American World Airways, and the Convair Flagships of American Airlines, in which Stratos equipment has proved its efficiency, low maintenance cost, and long period of service between overhauls.

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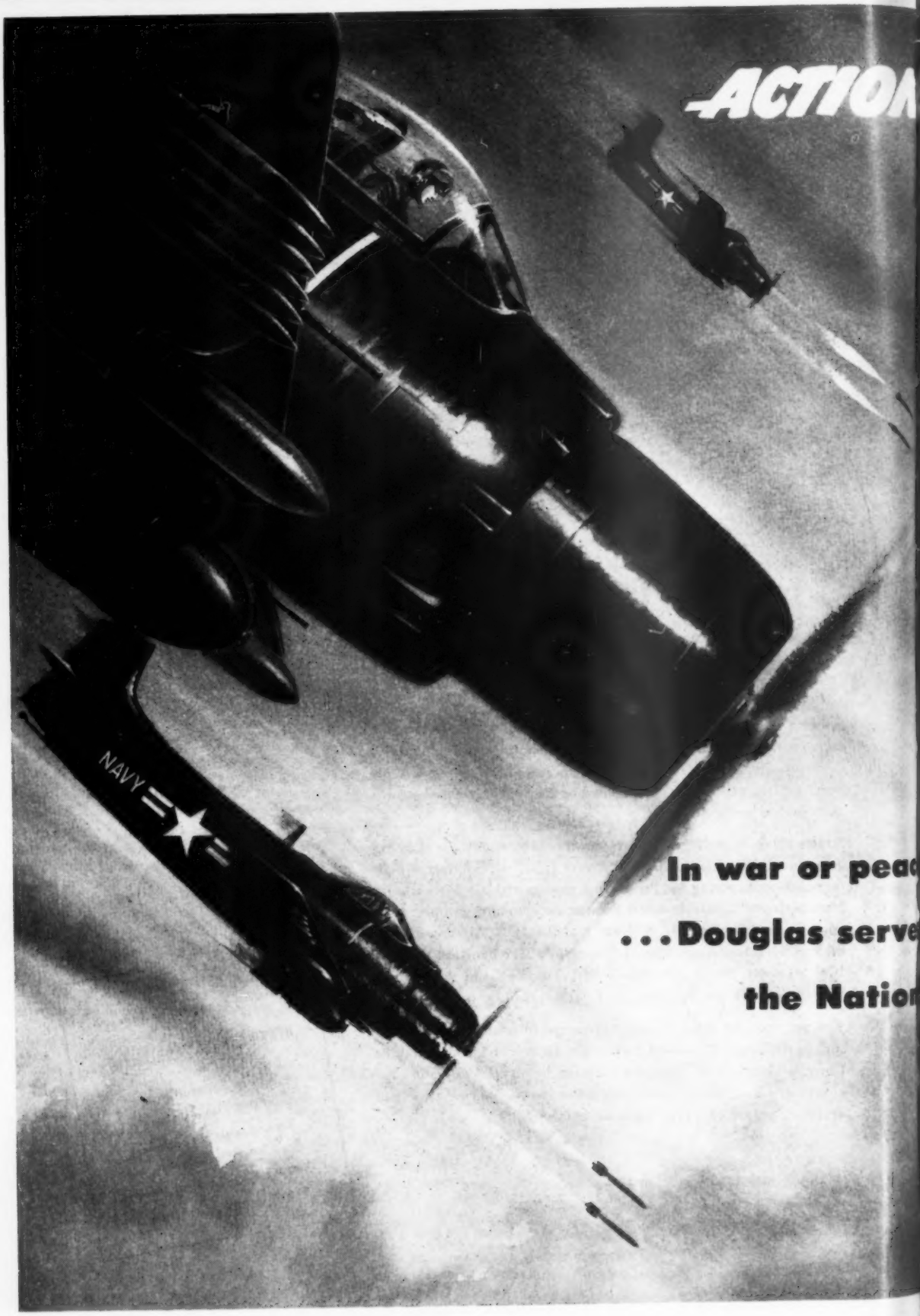
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Between the Lines

Another Army Air Force?

By James J. Haggerty, Jr.

CAN you remember way back when the Air Force and the Navy merged their respective air transport services into what is now Military Air Transport Service? There were mumblings at the time about what a great thing it would be for unification and overall economy and efficiency of operation.

It probably would have been, too, except that the human element was left out of the directive governing the merger. The Navy was permitted to maintain a small transport unit to "provide logistic support to the fleet." That was a convenient loophole. For the Navy didn't particularly like being deprived of its Naval Air Transport Service, so it promptly started building a new one, meanwhile paying lip service to MATS.

The result was that MATS is now for all intents and purposes a plain, ordinary Air Force transport service, although it still has some Navy planes and personnel—the minimum the Navy can get away with. The Navy, however, now has a new transport service; all that has changed after three years of unification is the name. It is now known as the Fleet Logistic Air Wings and it does, even Navy officers concede, provide a few transport services not directly connected with supporting floating units of the fleet, such as running a domestic passenger service not unlike the MATS operation.

Well, there is now a similar situation developing between the Army and the Air Force.

On September 18, 1947, the famous "unification" date, the Air Force was separated from the Army to become a separate entity and to provide air power for the unified Department of Defense—other than that provided by the Navy and the Marine Corps, of course. But the Army had a loophole, too. It would be permitted, under the unification act, to maintain such aviation as was required to support its own functions—ground operations. At the time it was thought that this would mean maintenance of only a few liaison planes for artillery spotting and observation work.

Plane-Conscious Army

But suddenly, about 18 months ago, the Army became airplane-conscious. It discovered that there were all sorts of uses for the light-airplane-rear-echelon transport, evacuation, communications work, etc. Then Korea brought the real debut of the helicopter and the Army went plane mad. It started ordering liaison planes by the hundreds and helicopters until the floor space of every rotary wing manufacturer in the country was saturated. The Army now has on order about 4,000 lightplanes and helicopters.

Plans for aerializing the Army, though, are only just beginning. The advent of the transport helicopter for short-range assault work changed an ancient concept of infantry assault. So the Army now plans to move its doughfeet around by helicopter, and frankly, few can find anything wrong with the idea. Carrying the idea a step further, the Army reasons that if transport helicopters can be efficiently utilized in short-range assault work, convertiplanes or fixed-wing assault transports can be utilized just as efficiently for longer-range, or behind the lines, assault.

Then again, the Army has been unhappy with the way the Air Force provides close ground support. So now it wants to provide its own, not with fast, heavily firepowered jets, but with armed lightplanes. We won't go into the merits of that argument at this point.

Helicopters Instead of Trucks

Finally, and very recently, the Army has decided that there are definite limitations to ground vehicles, like trucks and jeeps. They can't go over mountains and they're too slow. So the Army is now considering replacing them with rotary wing airplanes. Again, perhaps this isn't a bad idea.

The point is, though, where does it end and how soon will we have another air force to compete with the Air Force, Navy and Marines for the taxpayer's aviation dollar?

Presumably, if they were permitted to operate, for instance, lightplanes for close support, wouldn't the next step be a demand to operate longer-ranging, heavier-armed aircraft for penetration missions? The Army might even go in for some of those fast jets which are now anathema to the boys in khaki. And if the Army were permitted to operate assault convertiplanes to carry troops behind the lines, why should it not be permitted to operate its own heavy transports (like the USAF's Douglas C-124) to bring along the tanks and guns they would need when they got there?

Unquestionably, although the Army throws up its official hands in horror at the suggestion that it might be trying to encroach upon Air Force functional territory, there is a school of thought among the younger Army element which is turning just such ideas over in its collective mind.

The situation reached a head recently, a crossroads point where it must soon be determined whether we will have a full-scale fourth military air force or whether the Army will stick to its helicopters and liaison planes. Up until a few months ago, the Army was restricted by weight limitations as to what plane types it could operate without Air Force supervision. Obviously, the weight limit idea was not practicable, with even liaison plane weights going up rapidly. So the criterion was changed to "performance of function;" that is, if the use to which the plane will be put is one of the Army's assigned functions, then the plane type may be procured regardless of its weight.

Army and Air Force planners are now involved in drawing up a regulation to cover those functions. Is tactical support a function of the Army or the Air Force? By definition, it is Air Force, but the Army will probably put up a stiff argument on that one. And how about assault transport and strategic transport of Army materiel?

Obviously, there are differences of opinion between the two services on Army air support. But it would appear that these differences could be resolved easier by high-level compromise rather than by creation of a competitive air force. The Air Force members of the regulation drafting team had better hold tightly their ground or just that will happen.

"...and still Champion!"

This is a yarn about an airplane— specifically, a Chance Vought F4U-4 Corsair fighter bomber affectionately dubbed "Old Number 24".

When she was shiny and new, she went into combat with a Marine fighter squadron flying against the enemy in Okinawa, near the end of World War II.

By all rights, Number 24's duty should have come to a close there when victory came. But instead she was shipped back to the U. S. and put in "mothballs."

When war broke in Korea, she shed her cocoon and answered the call again. And by chance she was picked to serve aboard a carrier with her old squadron.

One day last winter she headed off the carrier for the mainland of Korea, as usual—only this trip marked her 150th mission.

By and large it was a fairly routine day—her napalm bombs set a warehouse flaming at Asong-ni . . . her 50-calibers strafed enemy troops dug in on a hill at Onjin . . . her bombs and rockets demolished three more warehouses at Suejari . . . and she topped off her 150th mission by strafing an enemy supply line along a highway.

Durable "Old Number 24" got hit a few times, as she had before, but overnight she was patched up, ready to go again.

There is no moral to this story except that it shows, better than anything else, *that nothing can beat a sound design and good workmanship.*

"Old Number 24," with her long service and versatility, is typical of the Corsair — which has followed up a brilliant record in World War II with an equally impressive performance under entirely new and extremely difficult conditions in Korea.

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SKYDROL *in Braniff International Airways' new Convair-Liner 340's*

Production Spotlight

T-28 at Two More AFB's: North American Aviation's T-28, a comparatively new Air Force trainer, has been assigned to two additional bases, making a total of seven where the planes are now being used. The new bases are Bryan AFB and Big Spring AFB, both in Texas. Previously the planes had been in service at Craig AFB, Selma, Ala.; Tyndall AFB, Panama City, Fla.; Williams AFB, Ariz.; Vance AFB, Enid, Okla.; and Reese AFB, Lubbock, Tex.

What Cessna's Doing: **Cessna Aircraft Co.'s backlog has now reached the $80,000,000 mark, most of it being in an order for more than 2,000 L-19 Army liaison planes. The company also has orders for parts for the Boeing B-47 jet bomber, the Lockheed T-33 jet trainer and F-94C jet fighter, the Republic F-84F jet fighter, some light commercial planes and farm hydraulic equipment. Sales in fiscal 1951 rose $26,500,000, more than triple the 1950 figure.**

Canadair Doubles: Canadair, Ltd., is planning a big expansion within the next year. The company expects to boost its payroll from 9,000 to 20,000 workers. An additional 40,000 workers will be employed by Canadair subcontractors. The company is also planning a $3,000,000 warehouse in Montreal for stockpiling spare parts.

Ceramic Coatings: **Bettinger Corp., Waltham, Mass., has opened what it claims is the first U. S. plant devoted exclusively to high-temperature ceramic coatings. The plant's first project will be an order for the ceramic coating of turbo-supercharger components produced by General Electric Co. for several aircraft types.**

Expands for B-47, F-84 Job: General Fireproofing Co., Youngstown, O., is planning a $1,500,000 addition to its plant facilities to handle production of Boeing B-47 and Republic F-84 components. The company now has a backlog of more than $30,000,000 in aircraft parts orders.

Douglas, Too: **Douglas Aircraft Co.'s new Tulsa, Okla., plant now has, either completed or in process, more than 50 separate construction projects costing almost $3,000,000 in preparation for production of Boeing B-47 jet bombers. Largest single project is a $965,806 electronics testing laboratory building.**

Major Reshuffle: The House Judiciary Committee, in a study on monopoly power in connection with the mobilization program, has come up with an interesting relative ranking of the big aircraft companies, both during World War II and during the first nine months of the Korean war. On basis of dollar volume of contracts received, here is how they ranked during World War II: Curtiss-Wright Corp., Consolidated Vultee Aircraft Corp., Douglas Aircraft Co., United Aircraft Corp., Lockheed Aircraft Corp., North American Aviation, Boeing Airplane Co., The Glenn L. Martin Co., Bendix Aviation Corp. and Grumman Aircraft Engineering Corp.

Here's how they ranked after nine months of Korea: United, Douglas, Boeing, Grumman, Lockheed, Republic Aviation Corp. (which was 11th during WWII), North American, Curtiss-Wright, Consolidated Vultee and Bendix. Martin dropped out of the first 10 to make room for Republic.

F-86E to Bow Out for 'F' and 'H': **North American Aviation's F-86E, the current production model, will be "phased out" as the company starts production on more advanced models, the F-86F and F-86H. The "F" will be built at the new Columbus, O., plant; the "H" at Los Angeles. Production of the "F" model is scheduled for early 1952; the "H" will follow in a few months. The "F" will be basically an improved "E", major change being a more powerful General Electric J-47 engine. The "H" will also have the new J-47 power plant, but it will be a fighter-bomber version rather than an interceptor and will be somewhat larger. The third production model of the F-86, the F-86D all-weather fighter, will continue in production at the Los Angeles plant.**

J.J.H.

INDUSTRY PERSONNEL

Arthur J. Phelan, former chief engineer and president of Turbodyne Corp., has been named manager of engineering for AiResearch Manufacturing Co. of Arizona . . . Norden Instruments, Inc., has chosen **Milo L. Voight** company controller.

Phelan

Pacific Airmotive Corp. has transferred **B. H. Atwater** from its eastern division at Linden, N. J. to vice president of sales and contracts and Burbank and has named **Gordon C. Marsters** its eastern sales manager. PAC also chose **J. B. Waskey** assistant to the vice president for production **L. B. Littrell** manager of the engine division, **Arthur William** production manager at Linden. **C. C. Smith** resigned as the firm's manager of industrial relations.

Marsters

Dillon

Ryan Aeronautical Co. has appointed **William P. (Doc) Sloan** supervisor of outside production . . . **R. J. Dillon** has become manager of Consolidated Vultee's new expediting department . . . **Gardner W. (Dick) Carr,** former McDonnell vice president, has been selected assistant to the president of Marquardt Aircraft Co. as a consultant.

Bowery

Francis S. Doyle has been named executive assistant to the president of Gyrodyne Co. of America . . . **Joseph A. Geisler** has been appointed vice president - manufacturing at American Helicopter Co.'s Manhattan Beach plant . . . **Leroy E. Bowery** has been selected manager of Beech Aircraft Corp.'s Liberal, Kans., division.

Bell Aircraft Corp. chose **James C. Fuller,** Fort Worth newsman, as its director of public relations for the helicopter division . . . Lockheed Aircraft Corp.'s Marietta Division picked **Henri Chappellet** assistant director of public relations and **Lee Rogers,** managing editor of the Atlanta Constitution, as director of public information. **Kenneth E. Allen,** Los Angeles newsman, has become publicity manager for AiResearch Manufacturing Co.

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London Letter

By Richard G. Worcester

WHATEVER Government emerged victorious from the election last month would have found itself faced with the desperate reality of the UK.'s adverse trade balance. Desperate measures are indeed the only remedies that can hope to curb the flow of external expenditure that so obstinately runs ahead of Britain's capacity to meet it with earnings. Matching this need for exports is the pace of rearmament. Various people have loudly proclaimed that the whole program is in danger because of the poor rate of recruitment into the aircraft industry, but they do not suggest ways of encouraging the enlistment of workers.

There are ways, of course; one is to direct labor, but it is assumed that no shade of British government will resort to compulsion. Another equally effective measure might be to raise wage rates, but when all efforts are being made to reduce costs, this solution would be repugnant to Conservatives and Socialists alike.

This leaves two courses of action—one with an immediate effect, the other a longer term plan. The first is for Government to build a larger proportion of its promised 300,000 houses a year, near defense plants. The other is to make better use of resources by cutting away the jungle of less essential prototypes and duplications. It is difficult, for example, to justify building both the Swift *and* the Hawker P-1067. Industry itself is now saying that RAF should find out which is the better, order that one and put the other plant into missile work.

•

Imagine Convair and Slick getting together to form a new company to operate the C-99 for the USAF. That is the effect of the new U.K. carrier who will offer to operate the Princess flying boats for the RAF. The new company is a joint venture between Saunders-Roe and Airwork, Britain's most important non-sked.

There is in fact a financial link between these two companies—wealthy Whitehall Securities has the money behind both. Curiously enough, it is the manufacturer who has the majority interest in the new venture.

The idea of the manufacturing industry going into the air carrier business is one that has caused surprise. Other non-skeds like Hunting are known to have their eyes on operating the big boats—now likely to gross 350,000 lbs. The Navy, too, would like to try its hand. So in the end the RAF, whose Coastal Command has more boat experience than anybody else, will probably thank everybody for their interest and run the boats themselves.

•

Retrenchments in the civil field mean that Britain's civil and military transport requirements would have to be pared down to two basic types, the Bristol Britannia for long haul and the Ambassador or Viscount for short haul. In the feederliner class the Prince makes up the third basic type. The Comet, in a category of its own, is obviously worth going on with the Mk 2 Avon version, for which there are already orders from Panair do Brasil and possibly BPCA, besides those earmarked for BOAC. If all other civil work were abandoned, it would release a sizable flood of manufacturing potential, which could be directed into subcontract military work.

In the same way, a drastic pruning of military requirements would achieve the same ends. A strong case would have to be made for continuing any projects except one medium jet bomber, the Valiant; one light bomber, the Canberra; one conventional sonic fighter; two anti-submarine aircraft, the Shackleton and ship-based Gannet; and the whole of the rest of the industry should move over to missiles. In addition, the Army needs a tactical transport and the Navy a general-purpose attack aircraft, the Wyvern, plus a suitable jet fighter. It would be a matter of opinion whether missiles could be available in time to obviate the need for expensive all-weather fighters.

What's doing at JACK & HEINTZ

Military Capitalize on Wide Range of J&H Inverters

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J & H Rotary Inverters blanket the aviation industry, providing 400-cycle a-c voltage output for 30 different military aircraft and many commercial planes as well.

A typical example of the value of the wide range of J & H Inverters is on the Boeing B-47 Stratojet. This plane requires the use of five inverters—three F46-2 models and one each of the F20-4 and F35-4.

Output capacities are offered in a wide range of models from 250 to 2500 volt-amperes, in either single or three phase. They are designed to operate from a 28-volt d-c input and to deliver a 115-volt, 400-cycle output. Voltage control in J & H Inverters above 750 va's is accomplished through the combination of a rectifier and a carbon-pile voltage regulator, while an electronic voltage regulator controls those inverters under 750 va. Speed is controlled with a carbon-pile regulator.

Each J & H Inverter is a self-contained power source, self-cooled up to 35,000 feet. Each incorporates a control box having a voltage regulator, relays for control of d-c input and a-c output, and filters for radio interference suppression.

All J & H Inverters incorporate special design features providing compactness, lightweight and close control of frequency and output voltage.

THE BIG AND LITTLE OF IT

These two models represent the extreme range of output capacities available in J & H Inverters—from 250 va in the F15-2 (above) to 2500 va in the F46-2 (below). The F15-2 is designed for 28-volt d-c input, 115-volt a-c, single-phase output, with electronic voltage control. The F46-2 is designed for 28-volt d-c input, 115-volt a-c, single-phase output, with carbon-pile voltage control. Both are motor-alternator-type inverters.

Step-By-Step Inspection Rigidly Enforced at J&H!

Because the production of J&H *Rotomotive* devices is nearly all out of the ordinary, we enforce rigid inspection at every stage.

All machined parts are gauged and checked for critical dimensions to assure uniform precision. Each piece of equipment is completely checked, both electrically and mechanically, before assembly. Each finished device is given a preinspection run-in under an operator's watchful eye. This type of "check and double check," step-by-step inspection reduces your maintenance headaches, means the equipment your J & H devices operates with will stay "on the beam."

Shown above are J & H inspectors using highly sensitive instruments to test inverters before final inspection.

Chief Engineer's Corner

As electrical requirements of military and commercial aircraft become more exacting, they create a need for special inverters. The B-47 mentioned above is a case in point. The three J & H Inverter models installed on this plane range from 500 to 2500 volt-amperes and deliver both single and three-phase a-c.

The major advantage in coming to Jack & Heintz for your inverter requirements is the fact that we offer this wide range of output characteristics.

We recognize the need for even more precise controls and greater sturdiness than is offered by the best inverters currently available, and a lot of our people are hard at work solving these and other important problems.

We have development programs under way at Jack & Heintz for inverters capable of operation at higher altitudes, with even closer frequency and voltage controls, longer life and characteristics to withstand excessive shock and acceleration forces. If some of the above improvements interest you, or you have need for an inverter approaching these ultimate capabilities...write JACK & HEINTZ, INC., Cleveland 1, Ohio.

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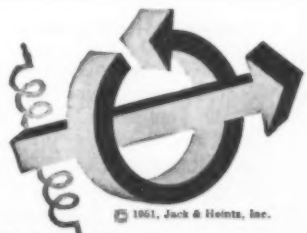
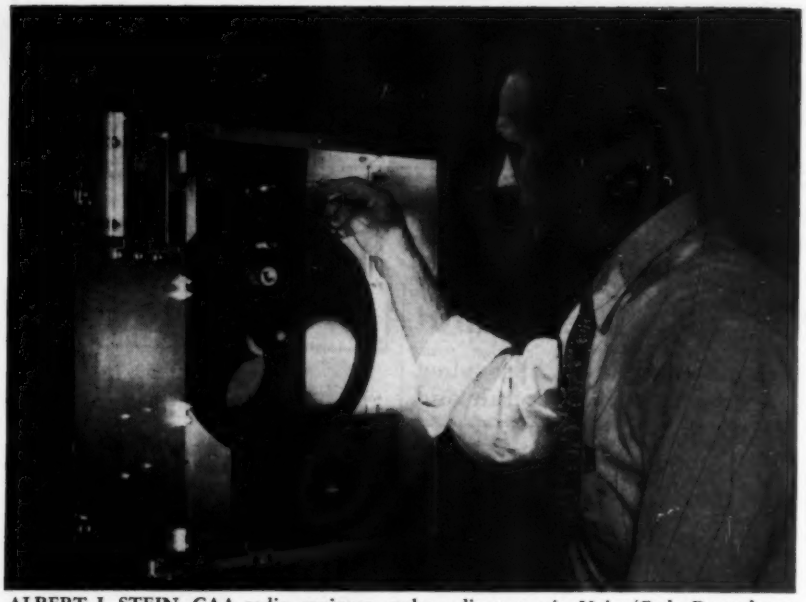


means electrical, hydraulic or mechanical devices designed to solve unusual problems of developing power, controlling it, or using it.



ALBERT J. STEIN, CAA radio engineer, makes adjustment in Voice/Code Reproducer, instrument now being widely installed on airway markers and radio ranges. Reproducer identifies radio facilities both by voice and in code.

CAA Speeds Voice Identification System

138 Collins units now being produced to serve as added safety aids on markers, radio ranges.

By Richard Fuller

CAA's long-awaited program to provide the nation's airway markers and radio ranges with voice identification equipment is now moving rapidly ahead, after a number of lean years during which actual, broad-scale installations were held up by lack of funds. Extent of the nationwide installation program is indicated by the CAA announcement that:

- **Some 29 installations across the country** are now in process of completion, with 20 more scheduled for next year. (See box.)
- **Three units have already been installed** on VOR's (omni ranges) at Dallas, Tex., Long Beach, Calif., and Oakland, Calif.; two more installations have been made on fan markers at La Habra, Calif., and New Rochelle, N. Y.

Collins Instrument

Basic unit of the voice identification equipment is the Collins Radio Co.'s Voice/Code Reproducer, developed for the CAA and currently produced by Maryland Electronics Corp. with Collins as a components subcontractor.

Need for this type of equipment has been made increasingly apparent over a period of years by accidents caused by infrequent but nonetheless repeated failures of pilots to recognize signals by which they were navigating. Obviously, disastrous results are possible if a pilot, thinking he is receiving signals from one omni range—and planning his navigation accordingly—is actually tuned in to another one in quite a different location.

Recently an airline pilot reported over one fan marker, not realizing that he was actually over an entirely different checkpoint, some 60 miles distant, and descending on a collision course toward a 13,000-foot mountain range nearby. Luckily, an alert air traffic controller warned him to hold his altitude and recheck his position. If these markers had been equipped with voice identification, the near-accident would not have occurred.

Code Now Used

Unfortunate truth is that most pilots are not experts in Morse Code, by which navigation aids identify themselves. Added to this is the psychological fact that pilots, anxious to have their navigation work out "on the nose," hear the signals they expect to hear, and conclude that their positions are correct. In view of the considerable complexity of the pilot's job, this human reaction is both natural and understandable.

The Collins Voice/Code Reproducer is expected to eliminate much of this confusion. In voice and in code, the device will automatically and unequivocally name the station to which a pilot is tuned, giving in addition the type of facility (whether high or low frequency). Unattended stations will broadcast this fact by recorded voice, so that pilots will not attempt to call back for additional information.

Installations are being made from 138 units now on order. Two units, with one being used as a safety standby in case of failure, comprise each VOR, each VAR (visual-aural range), and each fan marker. Where installations

Present and Future Installations

Stations at which Voice/Code Reproducers are now being installed:

VOR's
(omni ranges)

Pittsburgh, Pa.	Bozeman, Mont.
Chicago Hgts., Ill.	Caldwell, N. J.
New Orleans, La.	Cincinnati, O.
Seattle, Wash.	Indianhead, Md.
Kansas City, Mo.	Boston, Mass.
Montgomery, Ala.	Jacksonville, Fla.
Cleveland, O.	Salt Lake City, Ut.
St. Louis, Mo.	Minneapolis, Minn.

Albuquerque, N. M.

Fan Markers

Freehold, N. J.	Avon Lake, O.
Beltsville, Md.	Moosup, Conn.
Smyrna, Ga.	Mt. Pleasant, Pa.
Herndon, Va.	Boothwyn, Pa.

LOM's
(compass locators)

New York, N. Y. (LaGuardia)	Los Angeles, Calif.
	Chicago, Ill.

Cleveland, O.

Stations at which Voice/Code Reproducers are scheduled for installation in 1952. Fact that these stations are unattended will be announced by the equipment.

VOR's
(omni ranges)

Pikesville, Tenn.	Culberson, Tex.
Huntsville, Ala.	Hudspeth, Tex.
Pontiac, Ill.	Thurman, Colo.
Anton Chico, N. M.	Coalinga, Cal.
Thurman, Colo.	Hoaquian, Wash.
Coalinga, Cal.	Upola Pt., T. H.
Newport, Ore.	Kanai, T. H.

Newport, Ore.

VAR's
(visual-aural ranges)

Dover, Del. Islip, N. Y.
Williamston, N. C.

SMRA's
(low-frequency ranges)

Cochise, Ariz.	Neah Bat, Wash.
Silver Lake, Cal.	Penbina, N. D.

Wilmar, Minn.

are being made on compass locaters, only one unit is used. Plans for next year also call for use of the equipment on low-frequency radio ranges (SMRA).

Early in the program, the Philippines government evinced considerable interest in the equipment with the result that 16 units of the 138 on order will be allocated there.

The new equipment, costing about $3,000 for a complete VOR installation, is housed in a metal box 21" x 19" x 11". Coded signals broadcast by the device are generated by a keyer cam which makes and breaks contacts of a relay circuit operated at a constant speed. The voice is reproduced from a 16 mm. photographic sound track which is mounted on a rotating wheel in a reduction drive train. The film passes between a light source and a photoelectric cell. As the film wheel turns, the film modulates the light intensity reaching the cell. This varying light is translated into a voltage which causes appropriate fluctuations in the diaphragm of the listener's earphone, so that he hears the message.

General Approval

Inquiries reveal that those concerned are highly in favor of the new equipment. An Air Transport Association spokesman said that ATA has been pressing for action on the move for some time. Opinion of the Association is that the equipment will prove a boon to airline pilots, especially where it is used in high-density traffic locations, at which a multitude of radio navigation aids sometimes causes confusion.

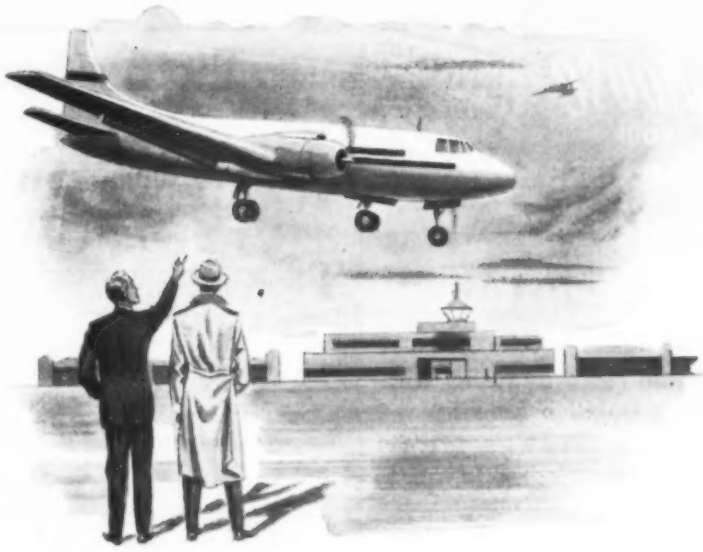
Aircraft Owners and Pilots Association, which participated in discussions with CAA during the experimental stages of the new equipment, has expressed reservations on use of the gear in low-frequency applications, where static could make the voice signal hard to understand. A spokesman for the AOPA, however, expressed decided approval of the current program.

Down Draft Blamed for UAL DC-3 Accident

"The severe down draft encountered" by a United Air Lines DC-3 was cited by the Civil Aeronautics Board as probable cause of the crash at Fort Wayne, Ind., on April 28, 1951, in which eleven persons were killed.

During the landing approach the pilot was warned that wind velocity had increased to 65 miles per hour with gusts to 75 miles per hour.

The approach was abandoned and the plane encountered the forward edge of the squall line where it was subjected to a severe down draft from which recovery could not be made.



Look! ... NO HANDS!

● Airplanes controlled entirely by a combination of electronic and electromechanical units are now a reality! The vision of avionic engineers made this possible ... why not apply these unique abilities to your product ... an inquiry will receive prompt reply.

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INCORPORATED
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ELECTRONIC MANUFACTURING ENGINEERS

AIRLINE OPERATORS

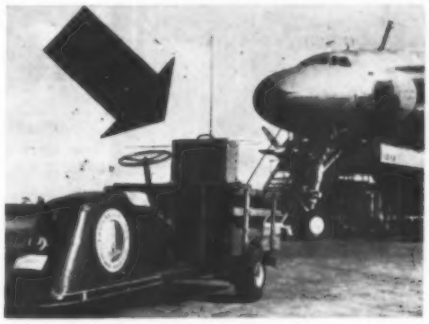
ILS RELIABILITY

THE G250A ILS FIELD TEST SET PROVIDES A COMPLETE AIRCRAFT ILS INSTALLATION CHECK

CHECKS ALL ILS RECEIVERS (Including Marker) ANTENNAS AND CROSS POINTER INDICATOR

COMPLETELY AUTOMATIC A ROUTINE CHECK BY ONE MECHANIC IN 3 MINUTES

ALL RF GENERATORS CRYSTAL CONTROLLED CHECKS OFF-COURSE AND COURSE CENTERING



Power requirements — 6v DC only — associated portable power supply available (with adjustable automatic cut-off switch)

Test Set is Portable — Weight 38 lbs.

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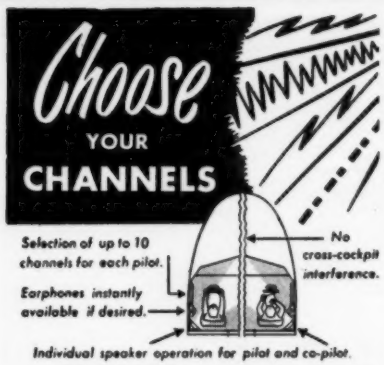
P. O. BOX 751 CORAL GABLES, FLA. PH. 4-0737



. . . avoid radio confusion with ARC's Isolation Amplifier

ARC's channel isolator accepts up to 10 audio input channels from range and communication receivers, ADF's, marker beacon receivers, transmitter sidetones, interphones, as required. Pilot and co-pilot select any combination without cross-cockpit interference, work at peak efficiency in complex navigation and communications situations. Headphone or speaker operation at flick of switch.

ARC Type F-11 Isolation Amplifier is CAATC No. IR4-1. Available in 14 or 28 volt DC models. Write for full details.

AIRCRAFT RADIO CORPORATION
Boonton New Jersey
Dependable Electronic Equipment Since 1928

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NEW YORK
"HEADQUARTERS"
OF AVIATION EXECUTIVES

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LEXINGTON AVENUE AT 48th ST., N. Y. C. 17
HOME OF THE *Hawaiian Room*

Extra Section

By William D. Perreault

THE wartime records of one airline indicate that more than 80% of its employees were eligible for military recall or draft at the start of World War II. During the war, substitution of these men with women workers in many jobs and hiring of elderly people capable of specific shop jobs solved many of the knotty labor problems. With the prospects of another war on the horizon, mobilization of the aircraft industry (with resulting labor pirating), and a need for preparing the transport industry for mobilization, it is surprising to see how few airlines are making use of this period to hire, train and apply the talents of this group.

•

In recent years the news has contained a liberal share of announcements regarding the construction of new wind tunnels and the improvement of existing ones. At first glance, one might wonder to what degree this new utilization of tunnels is purely academic and how much is basic research. An indication of tunnel utilization is contained in a recent statement by the USAF's Major General D. L. Putt, who noted that the Boeing B-17 required 248 hours of wind tunnel testing, while the B-47 Stratojet has already absorbed 4800 hours and is still clocking tunnel time.

•

More on the future of the helicopter: The Port of New York Authority, which operates its own Bell helicopter, reported its findings on comparative travel time over regular limousine routes in the New York area.

	From Manhattan		
	Limousine	Helicopter	Time Saved
To La Guardia	25 minutes	7 minutes	18 minutes, 72%
To Newark	38 minutes	9 minutes	29 minutes, 76%
To Idlewild	42 minutes	11 minutes	31 minutes, 76%
	Between Newark and Idlewild		
	75 minutes	15 minutes	60 minutes, 80%

•

Stan Seltzer, chief of the Washington, D. C. tower, has been making quite an impression with his "Information Bulletin," a mimeographed informal letter to local pilots. In a straightforward manner, Stan reviews some of the current "hot" problems in the Washington area—low-level flying, ground control, radar approaches, etc. Pilots who usually look askance at official bulletins on the same subjects find it worth the bother to borrow copies of the latest Seltzer prose.

•

The Italian Air Force Research Office has drawn up a proposal for the establishment of an international standard of rating the power of turbojet engines that is not dependent on a knowledge of the airspeed. The Italians point out that in all other fields of locomotion, horsepower is always expressed in units of work accomplished in a given interval of time rather than in units of force. Persons interested in the details of this proposal can obtain them from **Brig. General Enrico Cigerza,** Italian Air Attache, Italian Embassy, Office of the Air Attache, Washington 9, D. C.

•

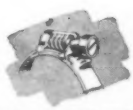
In a recent issue of its "Weekly Maintenance and Supply Letter," American Airlines related the sad story of Douglas DC-6B N90761. After delivery on July 7, it suffered three "accidents" during the remainder of the month, including a hole in the leading edge of the right wing, broken cargo door hinge suffered when wind slammed the door against a ground stand and a two-inch dent in the right flap. In August N90761 suffered a seven-inch bend in the right flap and a broken ADF loop struck by a cargoveyor. In September the tip of the VHF radio mast was damaged and a dent reported in the leading edge of the right stabilizer. Urged American: "Let's take greater pride in our new, and not so new, airplanes." AA makes unusually effective use of its weekly newsletter in keeping men on their toes.

Lightweight Actuators...

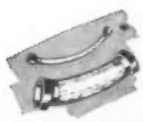
with Strong-arm Power

or a Watchmaker's Skill!

Whether you want to raise the heaviest landing gear or exercise the most precise positioning control, Breeze actuators can meet your exact requirements. A pioneer in actuator design, Breeze has the engineering experience, the production capacity and skill to solve problems quickly, to meet your delivery schedules. So whatever you want to push, pull, raise, lower, hold, release, twist or otherwise control, it pays to talk actuators with Breeze.

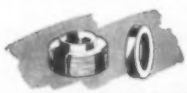


Aero-Seal Vibrafion-Proof Hose Clamps



Flexible conduit and ignition assemblies.

Multiple contact connectors to meet government specifications.



Job engineered, welded-diaphragm bellows.

WRITE TODAY outlining your control problem; or submit your sketches. Our engineers will gladly assist you.

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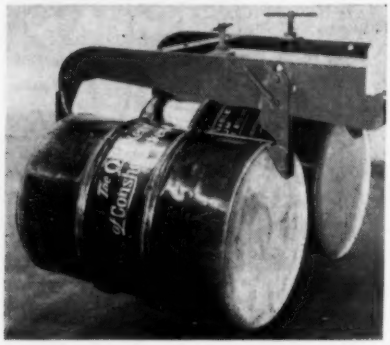
BREEZE CORPORATIONS, INC.

41 South Sixth Street Newark, New Jersey

Breeze rotary actuator releases twenty 500 lb. paratainers from Fairchild Packet in 10 seconds.

New Products



Drum Lifter

A horizontal drum-handling device that can be attached to any industrial fork truck without removing forks or making any hydraulic or mechanical connections is available from the Philadelphia Div., Yale and Towne Manufacturing Co. Completely automatic and self-contained, the unit fits over the forks and is fixed to them with two screw clamps.

The drum handler is capable of picking up either one or two standard drums. The clamps are simply lowered over the drums while the truck slowly backs away. Spring-loaded, the rear clamps snap under the lip of the drum; as the drum is lifted, gravity locks the clamping hooks in place. To deposit the drums, the truck is moved forward, stretching the springs on the rear clamps as the drums are lowered. Then when the forward clamps are free, the channels on the truck are tilted back. Truck is backed away to free rear clamps.

Attachment weighs 270 pounds and handles drums filled with any common material. Drums can be stacked to any height within lifting range of the truck.

Address: **The Yale and Towne Manufacturing Co.,** Philadelphia Div., 11,000 Roosevelt Blvd., Philadelphia, Pa.

Tape Markers

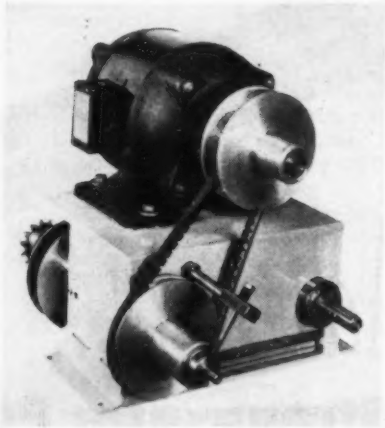
Available from the W. H. Brady Co. is a series of aircraft fluid line self-sticking tape markers made of cotton cloth coated with silicone plastic. The markers, which are mounted on a cardboard card, conform to Air Force-Navy Standard AND10375, which specifies use of both a color code and geometrical symbols.

The Brady Fluid Line markers are stocked in two different ways: (1) with fluid line system printed in the approved background color and with the appropriate symbol; (2) with the color bands and symbols only.

Also stocked is a warning marker showing skull and crossbones, used in compliance with the AN standard which specifies that warning symbols must be applied to lines whose contents are dangerous to maintenance personnel.

Special markers with any wording, color, size, or symbol and with various tape constructions can be made to order, manufacturer states.

Address: W. E. Schneider, **W. H. Brady Co.,** Dept. 58, 1602 E. Spring St., Chippewa Falls, Wis.



V-Belt Drive

A new compound V-belt drive for the calibration of jet controllers, tachometers, and other instruments is being produced by Speed Selector, Inc.

Capacities ranging from the light tachometer drives of ½ hp or less up to 10 hp are available; larger drives for loads of 20 hp and higher are in process of development. Ratios up to 50:1 with speed ranges from 150 to 7,500 RPM are produced by compounding successive pairs of wide-range combination sheaves.

Drives use standard NEMA motors of any required electrical characteristics and of either open or explosion-proof types. Rigid welded steel frame structures permit design changes to meet special requirements of various manufacturers.

Prelubricated sealed ball bearings and variable-pitch sheaves equipped with sintered bronze bushings are incorporated in the design.

Manufacturers state that accuracy of regulation is assured, holding speed variations to less than ¼ of 1% for any speed throughout the entire range.

Address: Mr. William Schweickart, **Speed Selector, Inc.,** 118 Noble Court, Cleveland 13, Ohio.

Self-Locking Nut

Kaynar Mfg. Co., Inc. has announced availability of a new self-locking, spring-steel lock nut, made with high-production stamping equipment and conforming to Army and Navy specifications.

Nut consists of a flanged anchoring portion integral with a thin-walled drawn shell which is fully tapped throughout its length. Made of high carbon annealed spring steel, the nut is crimped and then heat treated to provide a strong flexible threaded portion which grips the bolt within the span of the normally required number of threads, without an auxiliary locking device.

Manufacturer states that an almost unlimited number of insertions and removals can be made without appreciable altering locking torque. Nut is not adversely effected by high temperatures up to 700 degrees and is not damaged by solvents or lubricants.

New nut is made in the solid anchor, floating anchor, and gang channel type of the ¼" size at present and will be available in sizes from No. 8 to ⅜".

Address: **Kaynar Manufacturing Co., Inc.,** 820 E. 16th St., Los Angeles 21, Calif.

Lightweight Connector

A new, lightweight electrical connector, which conforms to AN specifications and is devoid of clamps, eliminating need for most right-angle connectors, has been developed.

Manufacturer states that the connector is waterproof, acid-proof, and vibration resistant and can be used where any standard connectors are required. Unique assembly provides an individual packing gland for each wire, whether arrangement calls for two, 32 or more wires.

Address: **Salsbury Corp.,** Electrical Div., 1161 East Florence Ave., Los Angeles 1, Calif.

Technical News Digest

• **Improved quality in fusion welding** and lower costs are promised by new, improved types of Solar Flux recently introduced by Solar Aircraft Company of San Diego. New types completely cover the welding of corrosion- and heat-resistant alloys. In one application of Solar Flux to high-strength, low-alloy steel aircraft engine parts, rejects were cut 95%, materials handling by two-thirds, and operator efficiency boosted 10%.

• **Conversion of a basic Douglas C-54** to a C-54B configuration was recently accomplished by California Eastern Airways, Inc. at its Oakland, Calif. base for Modern Air Transport, Inc. Conversion raised fuel capacity from 1,800 gallons to 2,800 gallons, upped gross from 62,000 pounds to 68,000 and raised zero fuel weight from 50,600 to 53,400 pounds.

• **A jet engine muffler** designed by Armour Research Foundation of Illinois Institute of Technology for reducing engine noise during ground test runs was described to the Acoustical Society of America by Dr. Howard C. Hardy. Structure channels exhaust through a series of 180-degree turns. Each turn kills at least 15 decibels of the noise.

• **Study of high-altitude winds** over the U. S. will be made by U. S. Air Force under code name "Moby Dick." Plastic balloons 50 to 110 feet in diameter and up to 130 feet long will be released from a base in New Mexico, carrying transmitters suspended 100 feet below the balloon. USAF direction-finding stations will track the balloons and gauge wind direction and speeds at altitudes to 100,000 feet.

• **Contracts for supplying complete air-conditioning** and pressurization systems for the first 100 new Convair 340's have been awarded AiResearch Manufacturing Company of Los Angeles. Earlier, AiResearch was granted similar contracts on this type of equipment for the Lockheed 1049's and Martin 4-0-4's.

• **Overseas distribution** of Skydrol, Monsanto Chemical Company's non-flammable aircraft hydraulic fluid, will be handled by Esso Export Corp. of New York and its foreign marketing affiliates. Esso will arrange availability of Skydrol at major airports around the world.

• **An aircraft temperature control system** known as Micropulse has been designed by Barbar-Colman Company, Rockford, Ill. It will control any standard reversible actuator or actuator-valve combination without mechanical or electrical feed-back from the actuator. It employs no amplifiers or vacuum tubes.

• **A plastic cutting drill,** designed by a Westinghouse Electric Corp. engineer is said to increase drill life three-fold. It features a straight, round shaft instead of the spiral-grooved shaft normally used, and also a notched drill tip which splits chips into smaller sections improving chip flow.

• **"Radio weather" forecasting** is being established as Elmendorf Air Base, Anchorage, Alaska, by the National Bureau of Standards to provide information on projected meteorological conditions as they affect short-wave radio communications.

• **Economical corrosion prevention** is promised by Shell Oil Company's new VPI crystals. These are slightly volatile amine nitrate crystals which give off vapors that condense on metal surfaces and provide a protective layer. One gram of VPI will protect a cubic foot of metal surface or parts for up to one year.

• **"Fastest and smallest computer in existence"** is The Jacobs Instrument Company's (Bethesda, Maryland) claim for the JAINCOMP-B, a unit the size of a television set, weighing 100 pounds and containing 300 tubes. The JAINCOMP computers use conventional input methods or accept inputs from measuring instruments such as pressure, temperature, etc., and can be used to give mathematical results or to operate machines.

• **Contract for the design of a hygrometer** suitable for measuring dewpoint at altitudes up to 100,000 feet has been awarded the Research Division of New York University College of Engineering by the Navy's Bureau of Aeronautics. Unit would be completely automatic with telemetering equipment to relay data from a balloon via radio.

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Direct to Anchorage from Seattle & Portland

Scheduled Economy Service in 4 engine PNA Flagliners

from Seattle $75.00*

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*plus tax

When the destination is Alaska, remember that more than 65% of Alaska's population lives along routes served by PNA.

Backed by Alaska experience of 19 years of continuous operation, PNA is best qualified to supply all your requirements.

For schedules and information call or write Pacific Northern Airlines, 1626 Exchange Building, Seattle 4, Wash., or any authorized travel agent.

The Alaska Flag Line

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TAKE TWA FOR A "QUICKIE VACATION"
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Enjoy TWA's Sun Country Stopover at no additional fare

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ENJOY A WINTER VACATION in the WEST INDIES

Follow the sun to the carefree Caribbean! Bask in the colorful beauty of sun-bathed beaches, enjoy the enchanting sights and romantic gaiety of HAVANA and JAMAICA. C&S offers you a choice of low round-trip excursion fares or bargain all-expense cruises priced to fit every budget. Plan your winter vacation *now*, with C&S!

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ALL-EXPENSE CRUISES AS LOW AS *$142.58

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Call your nearest C&S Office or your Travel Agent.

CHICAGO & SOUTHERN AIR LINES

DESIGN of Thompson aircraft tire prevents "throwing" of center ribs.

New Thompson Tire Has Long-Life Tread

Several months ago, Thompson Aircraft Tire Corp. of San Francisco, introduced to various western airlines for test operation a new Thompson Extra-Landings Tread. It consists of a series of staggered slots designed primarily to render a still greater average number of landings.

The spacing of these slots has been engineered to carry heavy loads and yet provide the proper displacement of the tread rubber when the tire deflects at ground contract.

This new slotted design eliminates most groove-cracking prevalent in some straight-rib tires and makes practically impossible the "throwing of the center-ribs due to poor adhesion of original tread-rubber to casing.

These new Thompson slots are tapered in depth, both in sides and ends, to reduce the hazard of picking up rocks, bolts, etc., which cause many punctures in the ordinary straight-rib design.

This slotted tread steers and handles like straight-rib tires and does not lose its resistance to side-slippage when taxiing and turning on west runways and ramps.

Thompson in San Francisco has had this slotted-tread mold equipment for several months for DC-6, DC-4, and DC-3 test operation, and is now installing Convair and other sizes. Similar mold equipment has now been installed in Thompson's eastern plant at Miami.

...reservations call or write United or an Authorized Travel Agent. The cost is often less than first-class surface travel today.

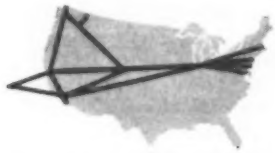
UNITED AIR LINES

How modern Mainliners . "make their own weather"

For centuries people have thought of all travel as being along fixed routes. The early airplane conformed to the idea. It followed a fixed path across the land like this:

Then along came the DC-6 Mainliner, with the range and reserve power to fly hundreds of miles off the straight-line course, following radio-marked alternate routes, and still get you there on time.

Thus, although United's normal mid-continent route still looks like this on the map . . .



. . . United, with long-range DC-6 Mainliners and new navigational aids, is no longer confined to one fixed route. Unlike the old-fashioned airline, United has modern *multiple* routes — all marked by electronic beams. Below is an example, between three typical cities.

No one section can claim unfailing sunshine. Weather moves and changes — and as it does, United chooses the particular radio airway where the weather is best.

The DC-6 Mainliner can also fly high *over* the weather with pressurized cabin comfort for you. Thus, with not one but *many* "sunshine routes" to choose from, United offers you greater on-schedule dependability all the year around.

THE NATION'S NUMBER 1 COAST-TO-COAST AIRLINE

PASSENGERS • MAIL • EXPRESS • FREIGHT • AIR PARCEL POST

It's great to make the grade at BOEING!

A Boeing engineer is *Somebody!* He's measured up to the high standards of an Engineering Division that's been growing steadily for 35 years.

If you qualify, there's a stable career opportunity for you here. You'll work on such challenging programs as the B-47 and B-52 jet bombers, guided missiles and other revolutionary developments. You'll find here the finest research facilities in the industry.

There are excellent openings for experienced and junior aeronautical, mechanical, electrical, electronics, civil, acoustical, weights and tooling engineers for design and research; for servo-mechanism designers and analysts; and for physicists and mathematicians with advanced degrees.

Openings are available at both Seattle and Wichita. Your choice of location—Pacific Northwest or the Midwest. You'll enjoy good salaries that grow with you, and Bocing provides a moving and travel expense allowance.

You'll be proud to say, "I'm a Boeing engineer!"

WRITE TODAY TO THE ADDRESS BELOW OR USE THE CONVENIENT COUPON

JOHN C. SANDERS, Staff Engineer—Personnel
DEPT. F-11
Boeing Airplane Company, Seattle 14, Wash.
Engineering opportunities at Boeing interest me. Please send me further information.

*Name*_____

*Address*_____

*City and State*_____

Airline Commentary

By Eric Bramley

IF you're lucky, you can go on a world air tour next summer for a mere $22,500 (per person, that is). It's the super-duper junket organized by **Temple Fielding,** travel author, who is described as one of the "greatest authorities" in the travel field.

A similar trip was made this year, starting eastward, using a chartered TWA Connie for the crossing and other airlines for other portions. Next summer, the trip goes west via Northwest Airlines, later using KLM and TWA. Stops include Anchorage, Tokyo, Formosa, Hong Kong, Manila, Jakarta, Bali, Bangkok, Calcutta, New Delhi, Agra, Bombay, Cario, Rome, Paris and London. Arrangements are by **Joseph Brooks,** president and general manager of Time Travel Inc.

Fielding emphasizes that it isn't an organized tour where you're herded around. You stay at luxury hotels, have individual limousines, valets, butlers, private secretaries, engraved stationery, any food you wish, etc. This year's tour was described as "non-austerity at its highest, most slothful, most frivolous level . . . You're investing your bankroll for fabulous treatment, and that's exactly what you are going to get."

Members are chosen by invitation (this year's limit was 15). You have to be congenial—no prima donnas—and, incidentally, you've gotta have 22,500 bucks that you won't miss. So, the line forms over here. (Good business for the airlines, anyway).

•

Noticed any change in United Air Lines' airplanes, advertising and public address announcements? There are no more Mainliner 180's, 230's, and 300's, which UAL had used to designate speed of its equipment. From now on they're DC-3, DC-4 and DC-6 Mainliners and Mainliner Stratocruisers. Convair 340's will be known as Mainliner Convairs. "Speed designations," UAL explains, "originally were adopted when the DC-6 was entering service in 1947. Their continued use, however, has become awkward with the operation of more than one type of 300-mile-an-hour aircraft. Hence the new, simplified names." The speed designations have already been removed from advertising and announcements, and are being removed from planes as they go through overhaul.

•

We were surprised recently to receive a crisp new one dollar bill in the mail—thought we were getting something for nothing. However, there was a slight catch. It was attached to a memo from American Airlines' Washington office, and was headed, "A buck says you don't know." Down below you were to guess "how little a 10-day Mexican holiday costs," and "how much a 10-day Florida holiday costs." (If you want to make an estimate, do it now, before reading further).

The answers were contained in a folded-over section at the bottom of the page. If you were within $20 of the correct figures, you kept the buck. Otherwise, you returned it to AA for donation to the Community Chest.

Credit for the idea goes to **Herb Ford,** AA's Washington sales manager, who tells us that he mailed out about 25 memos, mostly to local travel agents. As of this writing, five or six dollars had come back, and no one had claimed a correct answer. But reports were that a lot of people were doing a lot of figuring.

Herb's idea, of course, was to emphasize that you can go to Mexico cheaper than to Florida (on-season Florida prices were used). Mexico figured out to $280.60 round-trip fare plus $92.50 hotel and meals, for a total of $373.10. Florida totaled $406.16, including $136.16 fare and $270 hotel and meals. Anyway, the gimmick had the agents talking. (We mailed back our buck).

Idea Mart

(American Aviation will pay $5.00 for each new idea found acceptable for publication by the editors, in the fields of domestic or international airline sales, traffic, promotion, advertising, passenger service and reservations, or for ideas and innovations already in use by an airline but which have not been generally publicized throughout the industry. Address all contributions to Idea Mart, American Aviation, 1025 Vermont Ave., N. W., Washington 5, D. C. Contributions will not be returned to senders.)

Overnight Bags

When Aer Lingus, Irish Air Lines, abandoned plans for a trans-Atlantic air service after the war, it found itself stocked with a big supply of green overnight bags, each prominently displaying the company name and emblem.

Somebody at Aer Lingus had an idea: put them on sale. The demand was immediate and excellent. Since then, the airline has been re-stocking at intervals and selling 5,000 bags a year, chiefly to women. Each bag costs eight shillings sixpence ($1.19) and sells for 10 shillings ($1.40), so the airline not only makes a profit but each bag is a constant advertisement for the airline.

Coat Checking

Scandinavian Airlines System and Finnish Air Lines have solved the problem of identification of coats checked in flight in this manner: In the pocket of each seat is a hanger, which is marked with the seat number. Many passengers now take off their coats when they come into the plane, put them on the hanger, and hang them on the edge of the hat rack. After take-off, the stewardess collects them.

Passing out of coats just before landing is a simple matter, as each hanger is identified by seat number, and the stewardess usually puts the hanger on the hat rack. This system avoids tagging and writing of name or seat number or destination on tags. It also permits passengers to put coats on hangers themselves instead of waiting for the stewardess to collect them.

Airline People

—TRAFFIC & SALES—

L. B. "Larry" Kinports, Northwest's dir. of sales, transferred to Tokyo as Orient sales mgr. succeeding **James P. Farrell**, resigned . . . **Robert B. Forrest** is now sales mgr. for Robinson . . . **Fred A. Brown** promoted to ass't gen. mgr.-passenger service for United . . . **Bradley P. Bartow** appointed DTSM at San Francisco by Continental . . . **Byron H. Rogers** is now American's sales mgr. at Wilkes-Barre/Scranton, Pa.

Holton B. Shipman, New Orleans sales mgr. for Eastern, transferred to Hartford-Springfield as DTSM . . . **G. S. Kitchen**, Frontier's cargo sales mgr., given additional duties as public relations-mgr. . . . **D. V. Richardson** appointed by Trans-Canada as DTSM at New York, transferring from Chicago to succeed **H. J. Cooper**, recently resigned. He is succeeded in Chicago by **Edward J. May.**

J. E. Gainer, Jr., formerly western reg. mgr. of res. and tkt. offices for American appointed dist. mgr. of cargo sales in Los Angeles . . . **W. J. R. Shepherd** is now BOAC's sales mgr. for South America. He was formerly manager for BOAC in Brazil . . . **Gene B. Gardner** named DTSM by Pioneer for the Albuquerque-Clovis territory.

John T. Hancock is now city sales mgr. for United at Springfield, Mass.

Don Grefe former Braniff mgr. in Panama and Ecuador, is now mgr. at Buenos Aires. **William R. G. Taylor** succeeds Grefe.

—OPERATIONS-MAINTENANCE—

Fred E. Myers is now manager of operations for Ozark . . . **R. C. Couk** succeeds **J. W. Brown** as Southwest's dir. of flight operations and chief pilot. Brown has returned to active line flying duty . . . **W. P. H. Driver** appointed by Pan American to newly created post of ass't aircraft service supt. on Douglas DC-6 equipment. **George R. Bible** assumes similar post for DC-4 aircraft.

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First-Half Local Service Revenues & Expenses, 1950-51 Compared

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
All American	$ 1,941,877	$ 799,965	$ 1,095,911	$ 29,727	$ . . .	$ 2,834	$ 6,564	$ 1,764,850	$ 827,097	$ 937,753	$ 177,027
1950	1,336,810	506,786	802,890	19,434	. . .	2,060	471	1,556,298	770,395	785,902	-219,487
Bonanza	482,808	191,878	280,794	642	3,399	1,881	3,096	492,169	212,483	279,686	-9,361
1950	394,558	122,949	266,775	354	2,601	780	1,038	388,121	165,651	222,470	6,437
Central	611,000	99,760	460,741	. . .	235	376	54,064	758,188	350,071	408,117	-147,188
1950	342,608	25,636	312,992	. . .	. . .	187	1,238	322,054	135,488	186,566	20,554
Empire	526,874	197,359	305,693	3,849	. . .	1,050	17,916	517,405	280,824	236,581	9,469
1950	471,341	162,924	299,941	2,380	. . .	1,020	4,064	462,332	234,547	227,785	9,009
Frontier	1,915,961	625,013	1,211,367	10,955	36,959	3,445	13,565	1,964,094	924,746	1,039,349	-48,134
1950*	1,366,445	361,563	969,479	6,473	17,588	1,957	5,740	1,462,389	728,983	733,406	-95,943
Lake Central**	547,102	120,192	260,150	16,577	. . .	555	28,637	526,146	227,186	298,960	20,956
1950	283,184	41,150	186,631	2,525	. . .	347	52,195	283,718	142,049	141,669	-535
MCA***	391,290	223,196	151,170	8,950	5,158	1,162	1,018	456,499	164,376	292,124	-65,210
1950	Carrier did not begin operations over route 106 until September 26, 1950.										
Mid-West	192,046	8,872	183,026	. . .	. . .	43	79	199,409	89,228	110,181	-7,363
1950	366,143	26,085	339,639	. . .	. . .	156	212	384,999	209,638	175,361	-18,856
Ozark	848,113	160,695	667,572#	13,398	. . .	836	5,576	1,017,407	495,705	521,702	-169,294
1950	Carrier did not begin operations until September 25, 1950.										
Piedmont	1,718,471	1,137,708	515,243	18,431	19,269	8,448	13,495	1,552,464	793,019	759,446	166,007
1950	1,391,290	654,572	700,421	10,192	15,264	5,620	3,005	1,374,924	779,930	594,994	16,366
Pioneer	1,708,726	1,025,605	555,064	9,472	21,048	7,837	30,303	1,611,613	717,209	894,404	97,113
1950	1,566,260	831,144	676,448	8,816	18,954	5,974	7,177	1,493,320	716,453	776,867	72,941
Robinson	831,726	427,715	366,128	12,225	10,366	1,177	12,562	726,273	347,300	378,973	105,454
1950	658,095	260,634	382,329	7,326	4,867	966	1,187	553,721	287,693	266,028	104,374
Southern	1,117,552	401,161	690,751	13,847	. . .	1,950	6,519	1,253,907	667,175	586,731	-136,355
1950	765,134	136,397	619,507	5,588	. . .	855	. . .	777,384	399,860	377,524	-12,251
Southwest	1,204,178	732,687	404,499	8,033	28,098	2,819	19,671	1,138,841	479,810	659,031	65,337
1950	1,052,300	480,661	519,606	9,131	22,391	2,796	5,945	968,524	430,288	538,235	83,776
Trans-Texas	1,289,685	394,677	819,827	6,964	10,424	2,530	50,333	1,233,229	570,016	663,212	56,456
1950	1,158,742	276,473	864,722	5,409	8,505	1,588	1,687	1,113,891	549,823	564,068	44,850
West Coast	661,323	298,733	330,505	2,883	8,061	1,031	14,862	571,651	243,188	328,462	89,672
1950	605,894	245,907	349,372	3,158	848	538	1,499	609,460	289,054	320,406	-3,566
Wiggins	150,091	11,498	136,229	322	. . .	34	1,674	157,975	66,264	91,711	-7,884
1950	94,194	6,120	87,689	. . .	. . .	16	369	107,000	51,430	55,571	-12,807
Wis. Central	884,123	333,540	527,835	19,360	. . .	1,975	382	959,803	436,029	523,774	-75,680
1950	771,067	182,047	578,672	8,148	. . .	952	. . .	832,551	427,390	405,161	-61,484
TOTALS	17,022,946	7,190,254	8,962,505	175,635	143,017	39,983	280,316	16,901,923	7,891,726	9,010,197	121,022
1950	12,624,065	4,321,048	7,957,113	88,934	91,018	25,812	85,827	12,690,686	6,318,672	6,372,013	-66,622
					Helicopter Mail Service						
Hel. Air Service	177,271	. . . .	177,153	. . .	. . .	. . .	. . .	198,476	122,923	75,554	-21,205
1950	185,781	. . . .	185,754	. . .	. . .	. . .	. . .	164,512	92,546	71,966	21,269
Los Angeles	225,101	. . . .	223,450	. . .	. . .	. . .	1,467	200,990	117,238	83,752	24,110
1950	212,880	. . . .	212,864	. . .	. . .	. . .	. . .	213,675	139,838	73,836	-795

* Figures for Frontier Airlines are a combination of figures for Challenger Airlines and Monarch Air Lines, since those companies merged and began operating under the name of Frontier Airlines, Inc. on June 1, 1950.
** Figures reflect revised filing for first six months, 1950 and first quarter, 1951.
*** Figures cover local service segment awarded MCA by CAB in the Parks Air Lines Investigation Case.
# Mail revenues for Ozark include retroactive mail pay adjustments.

Local Service Lines Net $121,022 in 1st Half

LOCAL service airlines passenger revenue amounting to $7,190,254 in the first six months of 1951, was 66.4% or $2,869,206 above the $4,321,048 received from the same source in the corresponding period of 1950, according to reports filed with the Civil Aeronautics Board. For the six months ended June 30, 1951, mail revenue of the group increased $1,005,392 or 12.6%.

These gains, together with increases in all other sources of revenue, caused total operating revenues to show an increase of $4,398,881 or 34.8% over the first six months of 1950. Total operating expenses increased $4,207,583 or 32.6% resulting in a net operating profit for the group of $121,022 compared with an operating loss of $66,622 for the same period last year.

The accompanying table shows that increased passenger business produced this improved operating income picture. Passenger revenues for the group this year amounted to 42.2% of total operating revenues, as against only 34.2% of the total for the six-month period last year. Mail revenues, still the local lines' largest single source of income, dropped from 63% of total revenues in the first half of 1950 to a low of 52.6% this year.

Six local service airlines in order of reporting the largest gains in passenger revenue were: Piedmont Airlines, up $483,136; All-American Airways, up $293,179; Southern Airways, up $264,764; Frontier Airlines, up $263,450; Southwest Airways, up $252,026; and Pioneer Air Lines with a gain of $194,461 in passenger revenue.

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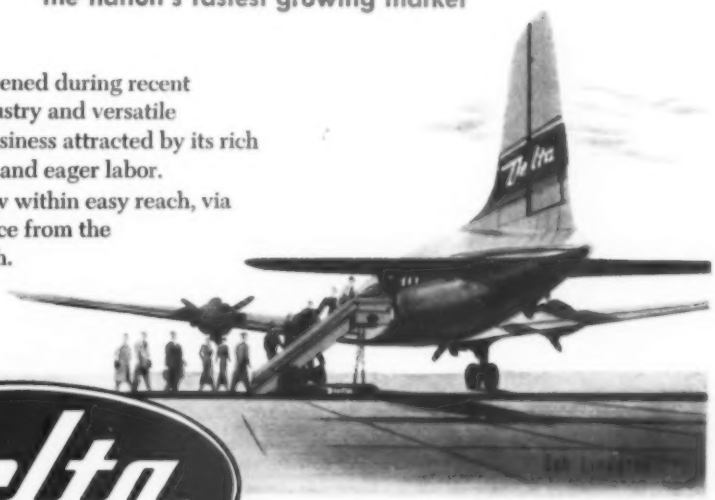

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Airport News Digest

How to Cope with Steel Shortage: Use of prefabricated structures and structural parts on civil airport and airway construction projects is one means of coping with the current critical shortage of structural steel, according to the Office of Aviation Defense Requirements. OADR says that the only other plan is indefinite postponement or deferment of essential construction until the steel shortage eases.

G. R. Gaillard, ADR director, stressed that use of prefabricated or so-called temporary structures should be considered "where such types would result in a saving of critical material, and where the need for the building is sufficiently urgent as to warrant immediate erection rather than wait until structural steel becomes available."

He said that where further postponement or use of prefabricated construction is out of the question, structures should be redesigned in such a way as to use reinforced concrete, thus saving steel. He suggested elimination of frills and trim, and use of "the lowest practicable quality or grade of materials or use of substitute materials. . . ."

Warning Signs: **Maine airport operators are getting some help on one of their annoying problems—nocturnal trespassing—from the Maine Aeronautics Commission. Large yellow signs warning would-be trespassers of a $200 fine or a three months' jail sentence are being made available, free of charge, to authorized airport operators who have a trespassing problem. The commission bought the signs after receiving many reports of malicious mischief on airport runways at night.**

ADMINISTRATION BUILDINGS

• **Incidentally, CAA is resigned** to the fact that the situation with regard to procurement of critical materials, particularly structural steel, for airport buildings is going to get worse before it gets better. Toughest period will be next six to eight months, then things should loosen up if we don't get into another war.

• **Bids have been advertised** for construction of a new $450,000 terminal at Douglas Field, Charlotte, N. C.

• **Nebraska Aeronautics Commission has tendered** state aid to three additional communities for construction of airport administration buildings. Communities are Trenton, Mitchell and Holdrege.

• **Alterations to administration building** at Allentown-Bethlehem-Easton (Pa.) are being made under a $19,672 contract.

• **Work on new $6,754,000 terminal** at San Francisco may start this week. Tubular steel filled with concrete will be used in place of solid steel beams, the latter being unavailable.

• **Top priority** over other airport construction has been given a new administration building at Austin, (Tex.) Municipal. Money for the building was included in a $20 million municipal and school bond issue approved last autumn.

• **A $150,000 postal and air cargo building** is under construction at Stapleton Airfield, Denver.

• **New terminal building and control tower** have been completed at Searcy Field, Stillwater, Okla. Field is under lease to Oklahoma A. and M. College.

RUNWAYS, TAXIWAYS, OTHER PAVING

• **Contract for construction work** on the Poplar Bluff, (Mo.) Airport, calling for a 4,000-foot asphalt runway, a taxiway, and parking ramp, has been awarded.

• **Plans are being made at Weir Cook Airport,** Indianapolis, for construction of new runways, new instrument runway layout, and reconstruction of existing runways.

• **Project for strengthening runways** at Municipal Airport, Portland, Me., has been postponed until Spring of 1952.

• **Contract amounting to $274,935** has been awarded for paving of the runways, apron, and taxiway of the Sioux City, (Ia.) Municipal Airport.

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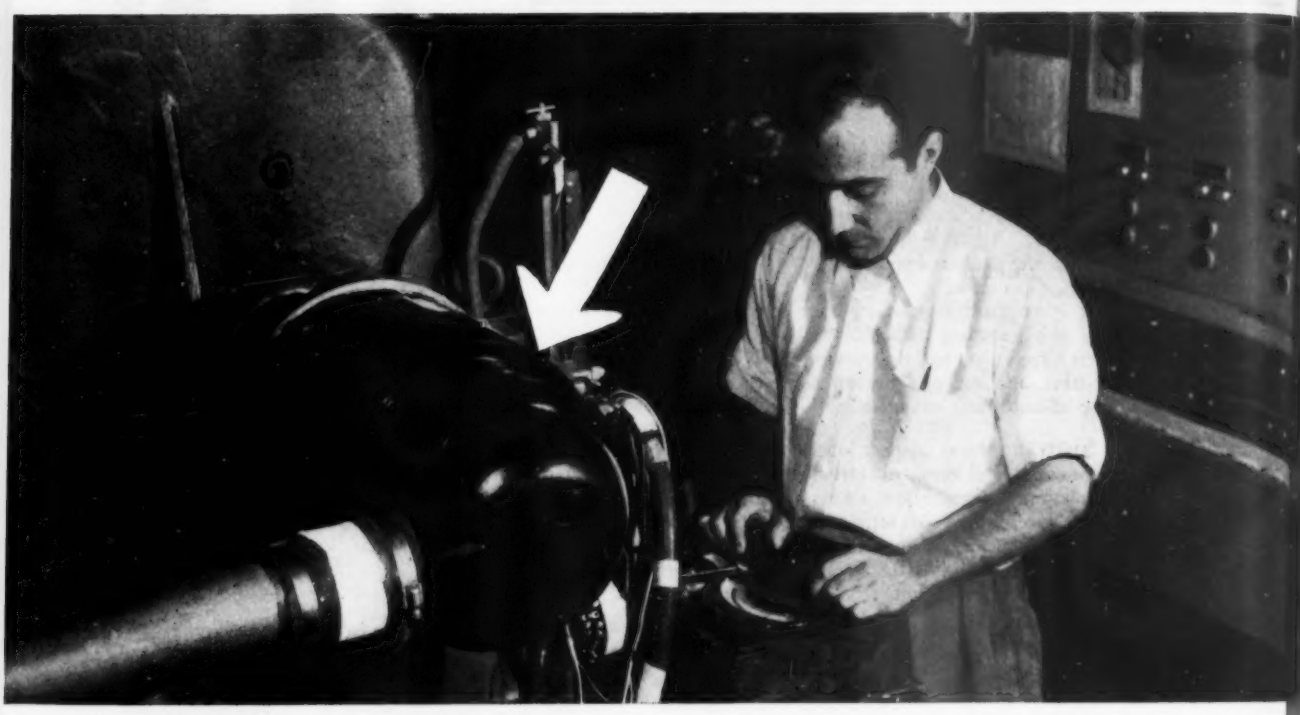
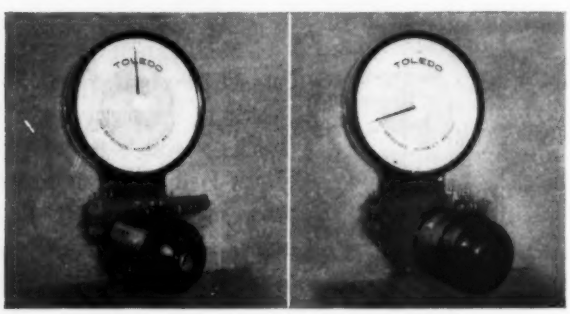


Rugged tests of new a-c generators (arrow) under worse than actual conditions establish their dependability in service. An outstanding feature of these alternators is their 300% short circuit current rating. This provides a safety margin to insure operation of the line clearing devices and gives positive short circuit protection.



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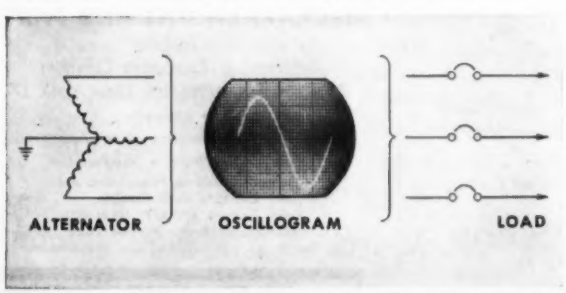
Weight is down 30% with the new alternator, over an equivalent d-c generator. Exciter and slip ring brush wear is negligible at the low exciter currents in a-c machines. Sparking and brush wear of d-c generators under conditions of high altitudes and high power output are eliminated.



Nearly perfect sine wave output of the alternators allows proper operation of electronic equipment demanding a low

300% Short Circuit Current Rating is Feature of New Line

Savings in weight and space plus greater reliability are natural advantages of alternating current in aircraft electric systems. General Electric offers these benefits in a new line of 3-phase, a-c generators to satisfy nearly every combination of engines, airframes, and loads.

Available either wye- or delta connected in a variety of ratings and speed ranges these alternators meet military specifications MIL-G-6099. Already a large number are on order by airframe manufacturers in addition to quantities being furnished the military services for both fighters and heavier aircraft.

Whether your problem is a-c or d-c, a single instrument or complete electrical systems for a fleet, contact your General Electric aviation specialist, or write General Electric Company, Schenectady 5, N. Y.

GENERAL ELECTRIC

Latest CAB Statistics on Lightplane Accidents

A statistical trend report prepared by the CAB is based on the first 2,000 non-air carrier accidents analyzed by the Board in 1951. The report breaks the accidents down into sections indicating the kind of flying engaged in at the time of the accident. These figures are compared with the first 2,000 non-air carrier accidents analyzed by the Board for 1950. Heart of the CAB trend report follows:

Instructional (includes only flying accomplished in supervised training): 1951—341; 1950—478. Non-commercial (non-revenue personal flying): 1951—1,323; 1950—1,274. Commercial (all non-air carrier revenue flying exclusive of instructional): 1951—250; 1950—182. Public (federal, state, and municipal): 1951—17; 1950—18. Miscellaneous (stolen aircraft, Civil Air Patrol, rescue work, fire-fighting, etc.): 1951—69; 1950—48.

Report covers a fixed number of accidents rather than a fixed period of time to avoid delay resulting from time lag between accident date and date accident is reported to CAB.

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The Washington View

By Vera Foster

A CHANGE in the procedure for obtaining private pilot medical certificates is in the talking stage in CAA's Washington headquarters. The same form will be used for private medical certificates that is now used for commercial and airline transport medicals. This, apparently, will necessitate an explanation by a CAA agent to each doctor.

While CAA-appointed medical examiners may issue medical certificates on the spot, other physicians must send the form in to the regional office, which will then issue the medical certificate for the private pilot. Could this be a swing back to the old practice of letting only CAA-appointed physicians give medicals?

•

Taylorcraft, Inc. and Diesel Power Corp., conducting tests on the light Diesel 100-125 hp engine, are leading the way to greater operating economy and range.

Advantages of the engine, reported by the Taylorcraft company, are elimination of carburetor icing, ignition system troubles and radio interference problems related to ignition, improved economy of operation and maintenance, better acceleration, and an almost three-fold increase in range over gasoline engines of comparable horse-power.

•

Those new cross-wind landing gear installations designed by John H. Geisse may be obtained now. Geisse can furnish the gear to interested persons at about $150. The modified gear weighs about four pounds per wheel and requires no modification of the gear or wheel. Even lower prices will be set when the gear goes into quantity production, Geisse says.

The great reduction in cost as well as in weight makes this an attractive addition for personal planes.

•

An agricultural aviation course will be held this winter by Central Aircraft Co., Yakima Airport, Wash. Company President A. L. Baxter says he will try to get ex-military pilots or G. I. flight-training graduates "out of the service station or drug store and into commercial aviation." He hopes to provide agricultural spraying companies with qualified pilots and at the same time to convince pilots that flying is not "just a good business to starve to death in."

•

Itinerant fliers in the New York area have long bewailed the difficulty of obtaining weather information, particularly in poor weather when it was most important. Private pilots often found phones jammed and did not like to pay landing fees to obtain weather personally. A new broadcast service has been started, reportedly the first of its kind, to assist these private flyers.

The Weather Bureau will transmit continuous information on 162.55 megacycles. The tape-recorded broadcast will last from three to seven minutes and will be amended hourly.

•

Operators may find synthetic flight trainers difficult to obtain these days. The military has overloaded manufacturers with orders. Since the CAA now permits five hours of flight experience to be omitted if replaced by suitable specialized instruction—which can include time in synthetic trainers—more operators may want to obtain or hang on to this type of equipment.

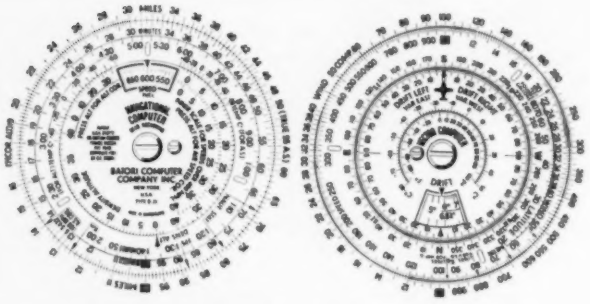
•

Navion owners are not being neglected by the Ryan Aeronautical Co., although new Navions are no longer available for the civilian market. Service representatives recently began the sixth of a series of nationwide service clinics which provide free ground inspections and flight checks for Navion owners. The clinics checked over 700 Navions.

IN FLIGHT

A PAGE FOR ALL PILOTS

BATORI NAVIGATIONAL COMPUTER



Batori's New Computer

TROUBLE with most navigation computers is incompleteness; each one seems to lack some useful feature that can be found only by using another computer. This is one shortcoming that should be solved with the Batori navigational computer. Designed by Oscar E. Batori, president of the Batori Computer Company, Inc., this unit has everything and a little more.

By "a little more," we mean it's even calibrated for compressibility and compressibility heating associated with high-speed flights in jet aircraft. At speeds above 400 knots, compressibility starts to distort airspeed indicator readings. True air-speed corrections on the average computer, which do not correct for this, are off as much as 26 knots more than Batori's computer at 400 knots. It can also be used with Mach number instead of true airspeed.

Calibrated to the pace of our commercial and military transports, planes making use of pressure-pattern flying on the long-haul flights, the Batori computer provides a simple method of finding pressure-pattern wind; pressure-pattern drift and, for economical engine performance, density altitude. It does this on the vector computer, the reverse side of the computer. This is arranged with three discs in much the same manner as the other side. Their arrangement eliminates the practice of plotting with pencils, drawing graphs or similar time- and attention-consuming practices.

For the Piper pilot, the Batori computer is no less interesting. Special, large windows are provided with speed, fuel consumption and drift information. This greatly simplifies the use of the computer, as does the basic coloring of the unit. It is provided in an aluminum-silver finish with enameled black lettering and in a black Alumilite finish with white enameled letters. The black is said to be particularly easy to read in poor light.

Another feature of the Batori computer is that only one moving dial is used. This makes possible easy, one-handed computer operation. Finally, it is of above-average quality. Made in Switzerland, its aluminum construction is of Swiss-watch quality, its engravings sharply defined and its discs spring-loaded to prevent slippage. It can be obtained in a pocket-size edition, less than three inches in diameter, or the large 4⅝-inch size.

Other uses for the Batori computer: converting miles to feet per second, knots, kilometers; Fahrenheit to Centigrade; feet to meters; pounds to kilograms; gallons to liters; for figuring time, speed, distance and required fuel; radius of action, drift, ground and air speed, etc. Priced at $15.

Accidents and High-Tension Wires

SEVERAL years ago, the Aircraft Owners and Pilots Association decided to do something about electric wires and poles into which non-air carrier pilots were frequently flying with disastrous results. The AOPA campaign was sparked by the slogan, "Bury the wires instead of the pilot." Though the purpose was good, very little was achieved. It cost too much to bury wires.

During 1950, there were 288 cases of collisions with wires and poles in non-air carrier flying, in which 20 were seriously injured, 9 killed, 72 aircraft destroyed, and substantial damage sustained by the remainder. About 88 per cent occurred in daylight. About 20 per cent occurred at established airports. Here's a typical example: Telephone lines at the end of the field were unmarked and difficult to see as the pilot dragged the field. On his final approach, he observed the line too late, and the wires caught in his main gear. The plane stalled in hard, short of the runway.

In Switzerland, where the country is criss-crossed with many high-tension wires spanning the valleys, the problem is even more acute. But the Swiss have come up with a handy solution.

At airports which lie on the floors of valleys having high-tension wires, the lines are marked with hollow yellow spheres suspended at intervals of about 150 feet. The spheres, simply aluminum shells, are light in weight and about 20 inches in diameter. There appears to be no trouble from wind, ice collection, or electrical disturbances. For the past 15 years the Swiss have been using the yellow balls, which serve not only as obstruction markers but also as a means of locating the airports.

The 'Right' Way to Bail Out

IF YOU get into a spin and decide that you'd better bail out, best advice is that you make the leap from the outboard side of the cockpit—that is, from the left side if the spin is to the right.

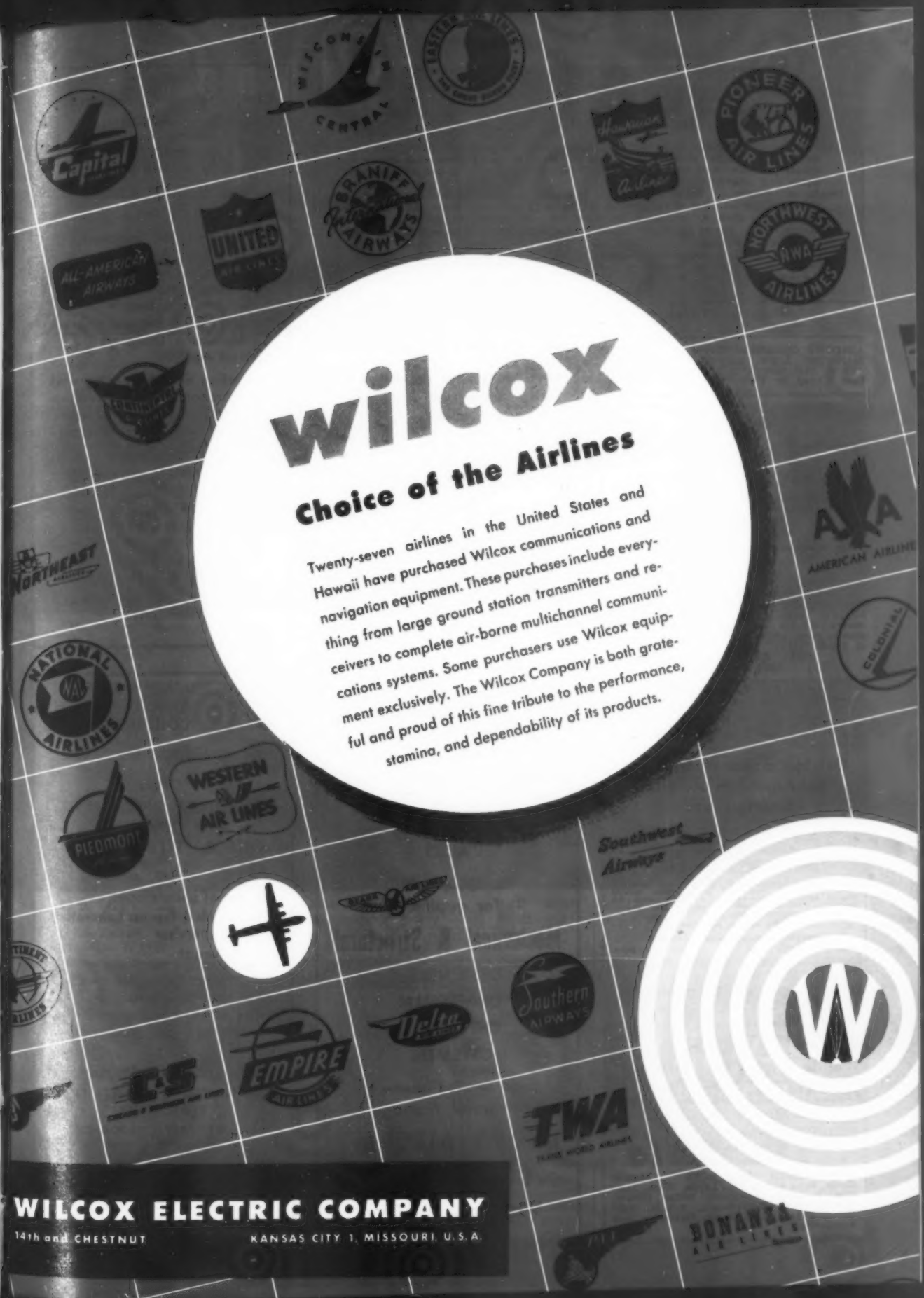
This procedure for hitting the silk in the safest way is set forth in a technical note from the National Advisory Committee for Aeronautics, following extensive tests with models of single-engined service planes in the Langley free-spinning wind tunnel.

The report says it is also advisable to leave the plane in a crouched position to aid in clearing the under-surface of the outboard side of the horizontal tail.

For airplanes in which the cockpit is located forward of the leading edge of the wing, bailing out from either side is dangerous, but without an ejection seat or a capsule system to throw the pilot clear, jumping from the outboard side is still a shade safer.

In the experiments, a pilot model was secured outside the fuselage structure of the airplane models at the outboard and again at the inboard canopy junctures. Then the model of the pilot was released while the airplane was in both flat and steep spins.

NACA found that the path followed by a man after leaving a spinning airplane can be calculated if the angle of attack and the rates of descent and rotation of the plane are known.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Twenty-seven airlines in the United States and Hawaii have purchased Wilcox communications and navigation equipment. These purchases include everything from large ground station transmitters and receivers to complete air-borne multichannel communications systems. Some purchasers use Wilcox equipment exclusively. The Wilcox Company is both grateful and proud of this fine tribute to the performance, stamina, and dependability of its products.
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KANSAS CITY 1, MISSOURI, U.S.A.

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Forms close 20 days preceding publication date. Address all correspondence to Classified Advertising Department, AMERICAN AVIATION PUBLICATIONS, 1025 Vermont Ave., N. W., Washington 5, D. C.

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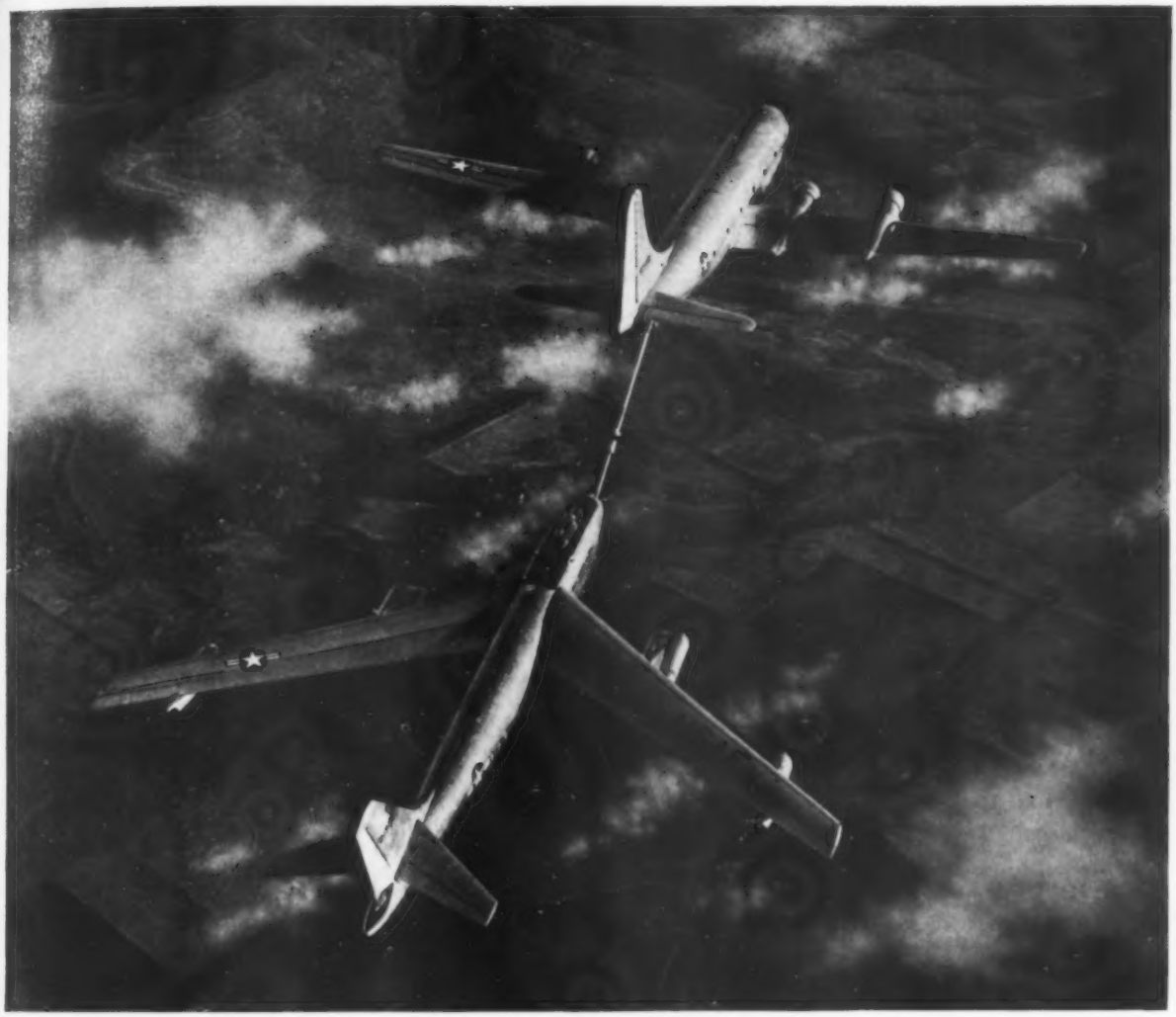


Fuel is pumped through "flying boom" into Stratojet from Stratofreighter tanker plane at high altitude.

Connected for "Long Distance"

"IMPOSSIBLE" a few months ago — routine today.

That's the story of how Boeing, working closely with the U. S. Air Force, has perfected a mid-air refueling technique capable of serving bombers and fighters — greatly extending their range and effectiveness.

Already, mid-air refueling equipment is standard on the B-50 Superfortress and the 600-mile-an-hour B-47 Stratojet bomber. Successful tests have also been made with Uncle Sam's high-speed jet fighters.

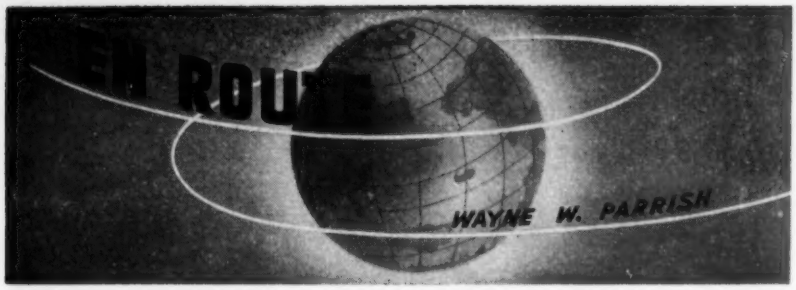
Two Boeing developments make possible fast, safe, mid-air refueling. One is the ingenious "flying boom"— a telescoping pipe from the tanker plane through which fuel is pumped into the receiver ship.

The second development is the KC-97A Stratofreighter tanker which can rendezvous at high altitudes with the B-47 Stratojet — or jet fighters — and transfer large quantities of fuel very quickly.

Advances like these explain why Boeing airplanes continue to grow, not only in speed and striking power but also in range, long after they leave the production line. They help keep America out in front in the world parade of airpower.

For the Air Force, Boeing builds the **B-47 Stratojets, B-50 Superfortresses** and **C-97 Stratofreighters;** and for the world's leading airlines Boeing has built fleets of the new twin-deck Stratocruisers.

BOEING



Same Skipper. Let's leave the Far East, good readers, and get a change of locale. Anyway, I've just gotten back from a six weeks' trip to Europe and I'll have some interesting inside stuff for you on Yugoslavia.

The trip eastward over the Atlantic on BOAC was somewhat nostalgic. The skipper was **Capt. A. C. "Tony" Loraine** and, to prove that the world is pretty small, he and **Jack Burgess** were the co-skippers on my first trans-Atlantic flight in 1944.

It was a Boeing back in 1944, but not a Stratocruiser. It was one of those big flying boats which BOAC and PAA used to prod across the pond before the era of DC-4's. I was one of eleven passengers (the flying boat payload was nothing to brag about) going to England in the midst of war, all of us in civilian clothes. I had been invited over by the Ministry of Aircraft Production.

We took off from Baltimore on a cold, dreary January day and stopped at Bermuda. We were there for several nights, as I recall, waiting for a signal from Lisbon to proceed. We took off hurriedly one afternoon and flew for something like 20 hours direct to Lisbon and landed on the Tagus River a few miles outside of the city.

✣ ✣ ✣

Neutral Portugal. In those days, the Germans and British were both flying into neutral Lisbon. I found newspapers of the day before from Germany and from England. The German Deutsche Lufthansa office was open just across the Avenida Liberdad from the BOAC office. A Jap came every night to the cocktail lounge of the Aviz Hotel, where we stayed, hoping to pick up stray bits of conversation and to note who was passing through town.

I'll never forget that flight from Lisbon to Foynes on the Shannon River in Ireland. We were given word late at night to get into limousines and we sped to the dock, and took off about midnight. Jack Burgess invited me to the cockpit after take-off and I sat for a long time watching the fading lights of the coast of Portugal. We were headed through a tough area. At least one BOAC transport had been shot down off that coast. Near Ireland we passed through a terrific storm.

After a night in a town near Foynes, we flew blacked out to Poole, near Southampton. It took over half a day to go through customs and immigration. Everything was searched and all papers confiscated. Then we boarded a blacked-out train for London, and I got my initiation into a real blackout. It had been a full week from Baltimore to London.

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No. 26. Well, just a few weeks ago, here was Capt. Loraine again and this time the trip (the 26th Atlantic air crossing) was in luxury with only one fast stop at Goose Bay, Labrador, and we were in London early the next morning. Tony is carrying on administrative duties most of the time and only occasionally takes a trip across. It was good to fly with him again.

Earl McKaughan, president of Trans-Texas Airways, was along on this latest trip, and as soon as we hit London we hiked over to Northolt Airport and boarded Aer Lingus for the 278-mile flight back to Dublin, where we spent a few days with Aer Lingus people and with **Liam Boyd** of TWA. (How's my horse doing in that derby, Liam?).

The trip to Dublin was an unqualified success. I've finally learned how to say "No Checks Cashed" politely. There is a sign in the bar of the Shelbourne Hotel which takes the prize for gentility. It says: "The management beg to intimate that cheques may not be cashed." Repeat that slowly and carefully over and over with a cultivated Irish accent and you've got a delicate mouthful.

I was initiated into Irish coffee by a gang of Aer Lingus folk. It's a degrading experience, frankly, and I only do these things to be courteous, you understand. It seems that you pour some whiskey (Irish, of course) into a cup, then fill the cup with hot coffee, then add some sugar and stir. Then, very delicately, you pour some rich cream on top. Don't mix it, just imbibe. A thoroughly disgusting concoction, don't you think? The sacrifices I make to tell you people about quaint customs!

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'Street Up.' In Dublin when they're repairing a street they don't put up signs saying "Street Closed" or something like that. The sign always says "Street Up" . . . One of the first things you notice on arriving in Dublin are the chimney pots on the rooftops. Rows and rows of them, and very picturesque . . . And then there are the butcher shops with big sides of beef and mutton hanging outside . . . people eat well in Dublin in contrast to the meager rations in Britain.

Out at the Royal Yacht Club with **Jerry Dempsey**, who is top boss in Aer Lingus and that famous guy **Capt. Jack Kelly-Rogers**, who is operations manager and has a flying history worth a book, and that grand gent **Col. W. P. Delamer** who runs Dublin Airport, and what a riproaring discussion we got into about flying equipment! Mr. Dempsey, a very sane gentleman, doesn't partake of anything stronger than coffee. The rest of us did all right, ending up with Capt. Kelly-Rogers' favorite port wine, which was the best I've ever had; that followed the martinis, the sherry and the claret! Earl McKaughan pitched in with his Texas accent and I'm not sure, but we either solved all of Aer Lingus' problems or created a lot of new ones. And by the way, the Yacht Club is in a beautiful setting, and it was a fine evening with a real sunset, which is unusual for cloudy Ireland.

I'll probably never be allowed back in Ireland for saying this, but in four days I never saw a beautiful Irish colleen. Maybe they've all come over to the U. S. because I am well aware of Irish beauty, but I looked and looked all over Dublin and never saw one that rated high praise. The best-looking gal I saw, in fact, was the wife of Max Stuart-Shaw, sales manager for Aer Lingus—and she is English. What have you Irish done with those colleens, anyway?

Ireland is a beautiful country. On the moors south of Dublin the yellow-flowered gorse and the purple heather made for delightful scenery. The Emerald Isle is still a gem.

W.W.P. AND BOAC CAPTAIN A. C. 'Tony' Loraine at London Airport.

Spark Plug and Ignition Symposium on an INTERNATIONAL SCALE

Representatives of the following overseas airlines, who attended the symposium, shown above, were: Air France Airlines—*Jean Aguer, J. Philippet;* Canadian Pacific Air Lines—*H. T. Bancroft;* KLM Royal Dutch Air Lines—*G. Lam, W. H. J. Wijnholds;* Pan American World Airways—Atlantic Division—*Wm. W. McClintock,* Latin American Division—*H. I. Mossbarger,* Pacific Alaskan Division—*R. K. Hart;* Pan American Grace World Airways (PANAGRA)—*S. T. Mitchiner;* SABENA Air Lines—*M. Curtiss Fillmore* (not in picture); Scandinavian Air Lines—*A. B. Holmer, L. G. Romberg;* South African Airways—*Trevor Phillips;* Trans Canadian Air Lines—*R. H. Farren, A. M. Weber.*

The seventh annual Champion Aircraft Spark Plug and Ignition Conference, held in Toledo last month, brought together over 150 technicians and maintenance men from all over the world. In addition to representatives of every major domestic airline, all branches of the air forces, engine manufacturers, oil companies and ignition parts manufacturers, representatives of nine overseas airlines were also present.

At these symposiums actual experiences with all phases of engine maintenance and operation as affected by ignition and related factors are discussed. Results of testing, "in flight" records, servicing and maintenance techniques, are put "on the record." In no other way could such a veritable gold mine of practical information be compiled. It is a tribute to the cooperative spirit of the aviation industry that it thus makes dramatic progress—through teamwork.

During the seven year period of these meetings, notable improvement has been made in total spark plug service life, and time between removals for overhaul. Flight delays due to unscheduled spark plug removals have greatly decreased. That the Champion R37S-1 spark plug has been one of the major factors in this improvement is indicated by the fact that every major domestic airline uses it, most of them standardizing on it exclusively. The same is true of the majority of overseas airlines.

CHAMPION SPARK PLUG COMPANY, TOLEDO 1, OHIO

More Airlines FLY WITH CHAMPIONS Than With Any Other Spark Plug

THE ARMY LIBRARY
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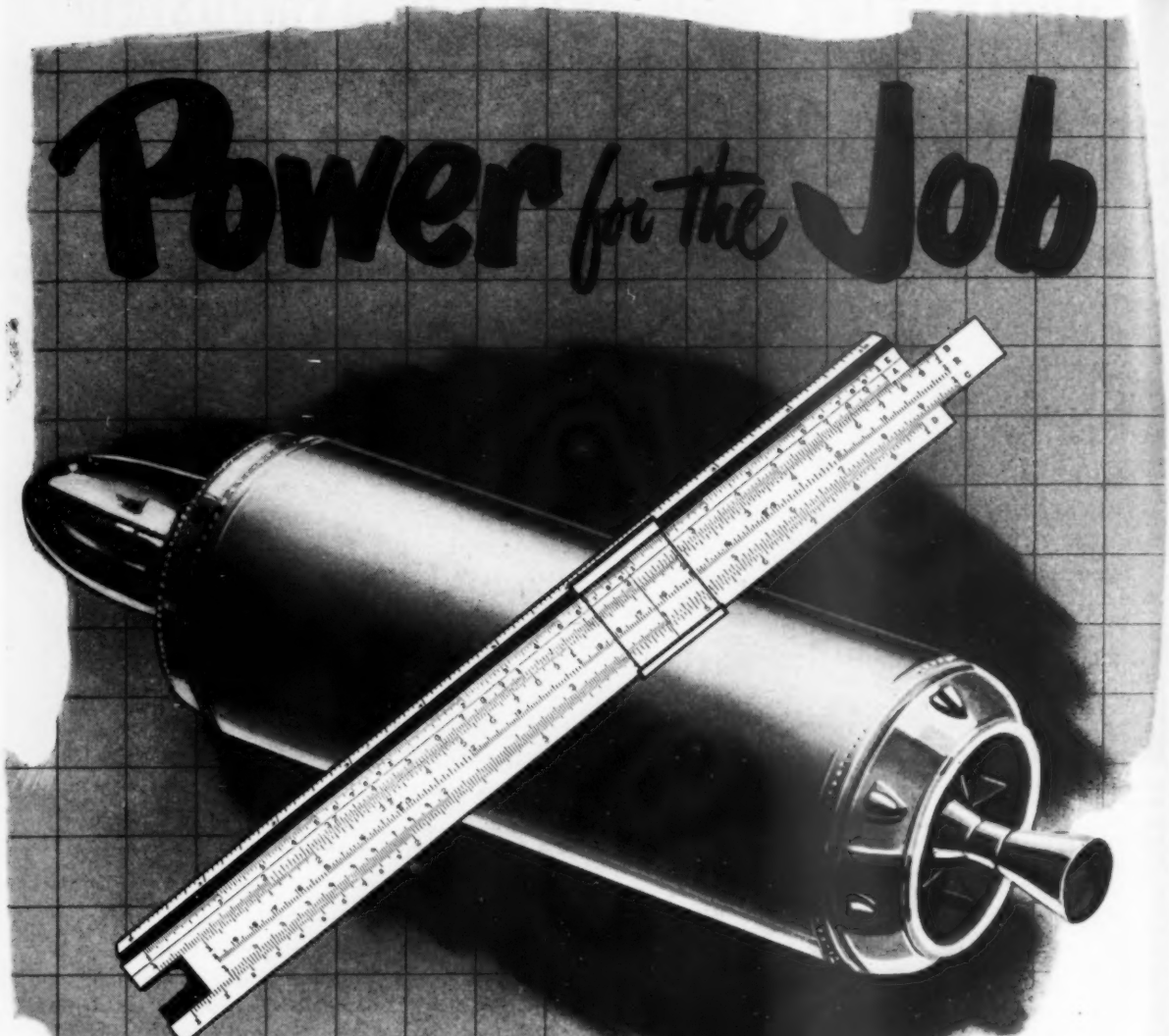
Power for the Job



Designing, Developing and Producing power plants to meet precise and specific requirements long has been a Fairchild specialty.

Today Fairchild Engine Division design and development projects include gas turbines and unusual specialized reciprocating engines, for unique and unconventional applications, both in the aeronautical and non-aeronautical fields. Some of these power plants are already being produced in limited quantities.

In addition, Fairchild is engaged in large scale production of an auxiliary power plant for aircraft and of major components for the General Electric J-47 jet engine at its Engine Division plants in Farmingdale and Valley Stream, L. I.

ENGINE AND AIRPLANE CORPORATION

FAIRCHILD *Engine Division*

FARMINGDALE, N. Y.

Aircraft Division, Hagerstown, Md., Chicago, Ill. • **Fairchild Guided Missiles and Stratos Divisions,** Farmingdale, N. Y.

MATS' 1266th Air Transport Squadron attained a daily utilization mark of 11.22 hours for October with a Boeing C-97 Strato-freighter. The flights, between Japan and California, bettered the former record by 63 minutes.

Modifications on the Boeing B-47 are being carried out at Tinker AFB, Oklahoma City while Convair B-36 repairs and modifications have been switched to Kelly AFB, Tex.

Air Force's two new long-range bombers, the Convair XB-60 and the Boeing XB-52, are nearing flight date, although neither is expected to fly before the first of the year. At Ft. Worth, Convair has rolled out the XB-60, eight-jet version of the B-36. Plane is complete except for installation of Pratt & Whitney J-57 10,000 pound thrust engines, none of which has yet been delivered. At Seattle, Boeing's XB-52 is virtually complete. The plane, also powered by eight J-57's, is expected to fly first because it has priority on engine deliveries.

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AIRLINES

Possible merger of West Coast Airlines and Empire Air Lines is being discussed by officials of the two companies, according to joint announcement ("Newsletter," Oct. 29). It was pointed out that there are "innumerable details upon which both managements must agree" before merger application can be filed with CAB.

Western Air Lines' DC-4 has been returned from Korean airlift and is being overhauled and refitted to go back into west coast coach service. Return of the plane reduced the Pacific lift of Pan American World Airways, the contractor, to 14 ships, including seven PAA, six American Airlines and one Capital. Flight frequency, however, will be maintained at approximately the same level.

New **contract** between Braniff Airways and Air Line Pilots Association contains a mileage pay provision different from any others recently signed. In addition to payment to first pilots and reserve pilots of a straight 1½c per mile for the first 24,000 miles flown in a month, Braniff contract calls for payment of 3c for each mile flown over 24,000. Co-pilots will be paid 50% of a first pilot's flight pay. Wage provisions of the contract, which runs to Mar. 16, 1953, are retroactive to Nov. 1, 1950.

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CIVIL

Dr. **Harold E. Mehrens,** supervisor of the aviation education program of CAA's Office of Aviation Development, has been chosen as 1951 recipient of the Frank C. Brewer Trophy. The trophy, administered by National Aeronautic Association, is awarded annually to "any individual or organization which contributes most to the development of air youth in the field of education and training." Presentation will be at Wright Memorial Dinner, Washington, on Dec. 17.

CIVIL AERONAUTICS BOARD

A 20% cut in Chicago and Southern Air Lines domestic mail rates has been proposed by CAB which would mean about $249,000 less annual mail compensation for C&S beginning with Oct. 1, 1951. New rates average $1.45 per ton-mile or about $1,045,000 yearly. CAB estimates $382,000 of this would be compensatory and $663,000 subsidy. Board's proposal was based on a financial and traffic forecast for "a future year" submitted by C&S.

Suspension of trunk-line service at nine cities and a new route segment between Buffalo and Washington, D. C. have been proposed by All-American Airways to strengthen its local service route No. 97. Following suspensions were proposed: (a) TWA at Lancaster and Wilmington; (b) American at Parkersburg, Clarksburg, Elkins and Erie; and (c) Capital at Williamsport, Harrisburg and Reading. AAA's new Buffalo-Washington segment would be via Bradford, Williamsport, Harrisburg, Lancaster and Baltimore.

Numerous requests to broaden scope of the New England-Southern States Merger Case were turned down by CAB which said it would consolidate only "concrete merger proposals." Expansion requests dealt with consolidation of new route applications, additional exploratory merger considerations and transfer of trunk-line points or segments to local service lines. But CAB said only a "gigantic" proceeding far beyond the original issues would result if the requests were approved. Meanwhile, with such details out of the way, a second prehearing conference has been assigned for Nov. 27 in Washington.

Chicago and Southern Air Lines requested immediate exemptions for transfer of Greenwood, Mississippi, from its trunk-line routes to Southern Airways' local service routes. Exemptions would be for the interim period until CAB disposes of C&S' prior request for permanent transfer of the city to Southern.

Southern Airways asked the Board to renew its certificate for local service route No. 98 for five years from date of Board decision on the renewal application. Current certificate expires Feb. 8, 1952.

Reduced temporary mail rates for Pan American-Grace Airways, proposed by CAB last month, were made effective following withdrawal of Panagra's objections. Retroactive to Oct. 1, new rates will reduce temporary annual pay to Panagra from $2,603,000 to about $623,000. But mail compensation for such things as return on investment and Federal tax allowance will be added to new annual figure when final rates are established.

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LABOR

Air Line Pilots Association-AFL has sued former president David L. Behncke for $4 million in addition to its previous request for a permanent

injunction barring him from being president. The union wants $2 million for damages and $2 million for mishandling construction of the Chicago headquarters building.

Slick Airways and its bargaining union, the Air Freight Labor Association, have agreed on a contract giving its mechanics an hourly wage rate of $1.70 to $2.06 an hour, all within the legal 10% ceiling. WSB, however, must rule on a 15c bonus for leadmen, a 7½c bonus for the graveyard shift, double time after 12 hours, $2 an hour for flying in non-company planes and the addition of workers' birthday as paid holidays.

Robinson Aviation, Inc., Teterboro, N. J., has been ordered by NLRB to stop discouraging its employes from joining the IAM-AFL or any other union and to rehire two workers who, the Board found, were fired for union activity. One of the employes has refused to return but both will receive the pay they lost.

Northrop Aircraft, Inc. has asked WSB to approve a 5% wage boost, a cost-of-living escalator clause and automatic pay progression for the four lowest labor grades plus progression to the midpoint for other pay grades. Northrop's unorganized employes thus will gain a new contract virtually identical with the one recently signed by Douglas and its IAM-AFL workers at El Segundo and Santa Monica.

Ryan Aeronautical Co. and the United Aircraft Welders-Independent have agreed on a pact calling for an 11% wage boost retroactive to Oct. 22. If WSB approves, the new scale will be $1.23 to $2.11 an hour.

Chance Vought Aircraft will pay 6,000 UAW-CIO and IBEW-AFL employes a 4c an hour "improvement factor" increase beginning Dec. 10. The boost has been approved by the Dallas Regional WSB.

Pratt & Whitney Aircraft and IAM-AFL workers at its Southington, Conn., plant have signed a two-year contract almost identical with the pact signed by the union and P&W's East Hartford plant. A recent 19-day strike at Southington ended with no gain for the local there.

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FINANCIAL

National Airlines' net for the first quarter ended Sept. 30 was $222,107, or 22c a share, compared with a net of $181,007, or 18c a share, for the same quarter last year.

Chicago and Southern Air Lines netted $874,016, or $1.72 a share, for the first nine months of 1951 as against $395,300, or 78c a share, for the same period of 1950.

Mid-Continent Airlines will pay a 25c dividend Dec. 21 to stockholders of record Dec. 10.

Colonial Airlines netted $275,000 for the first nine months of 1951 as against a net loss of $167,559 for the comparable 1950 period.

The Flying Tiger Line had a net of $610,203 on gross revenues of $5,308,000 for the first quarter ended Sept. 30.

Philippine Air Lines netted $1,211,030 for the first nine months of 1951 as against $245,478 for the same period of 1950. Firm's deficit of $1,441,363 on June 30, 1950 has been reduced to $9,113.

Curtiss-Wright Corp. netted $4,011,283 on sales of $123,698,458 for the nine months ended Sept. 30 as against a net of $4,962,237 on sales of $98,009,098 for the same period of 1950. Backlog is $1,150,000,000.

Bell Aircraft Corp. and subsidiaries netted $1,463,906, or $3.35 a share on sales of $55,728,057 for the nine months ended Sept. 30. For the same 1950 period, Bell netted $786,219, or $1.80 a share, on sales of $18,778,223.

Republic Aviation Corp. will pay a 75c dividend Dec. 14 to stockholders of record Nov. 30.

Solar Aircraft Co. will pay a 20c dividend Jan. 15 to common stockholders of record Dec. 31.

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AROUND THE WORLD

Air France will soon order three de Havilland jet Comets powered by Ghost engines for use between Paris and Saigon, Indo-China and possibly between Paris and Brazzaville, French Equatorial Africa. The airline has also ordered 12 Breguet "Deux Ponts."

IATA's Flight Technical Group has recommended world-wide standardization of visual landing aids in airport threshold areas. The group approved both the Calvert and ALPA systems as meeting the operational requirements.

Aircraft manufacturers from France, Italy, Belgium and Holland have started discussions to determine how their output can be integrated into the production programs of NATO countries.

Japan Air Lines, which is being operated by Northwest Airlines, has started service between Tokyo and Osaka using a DC-4 and two Martin 2-0-2's. NWA operates the planes while JAL is handling sales and advertising.

International Civil Aviation Organization's Council has asked that the international airline tax structure be equalized. On fuel and other taxable supplies, ICAO recommends they be exempted from customs and other duties on a reciprocal basis. ICAO wants each country to levy income and flight equipment taxes only on its own operators, exempting other airlines which fly into its country.

British European Airways is now carrying freight at a rate exceeding 22 million pounds a year. The line has 52 schedules a week between 14 cities, probably making it the largest air freight network in Europe.

French manufacturer Sud-Ouest is designing a light jet bomber, the SO.4050, derived from the SO.4000 with the engines located in nacelles under the swept wings. It will probably be powered by ATAR engines. A fighter, the SO. 6026, has made its first flights.

E. S. Pefanis has been chosen secretary of International Air Transport Association's New York office and also secretary of IATA Traffic Conference No. 1.

Ernst Carl Robert Ljungberg, director general and president of Sweden's Royal Board of Civil Aviation, has been named Secretary General of the Council of the International Civil Aviation Organization, effective Jan. 1. He succeeds Dr. Albert Roper, who is retiring.

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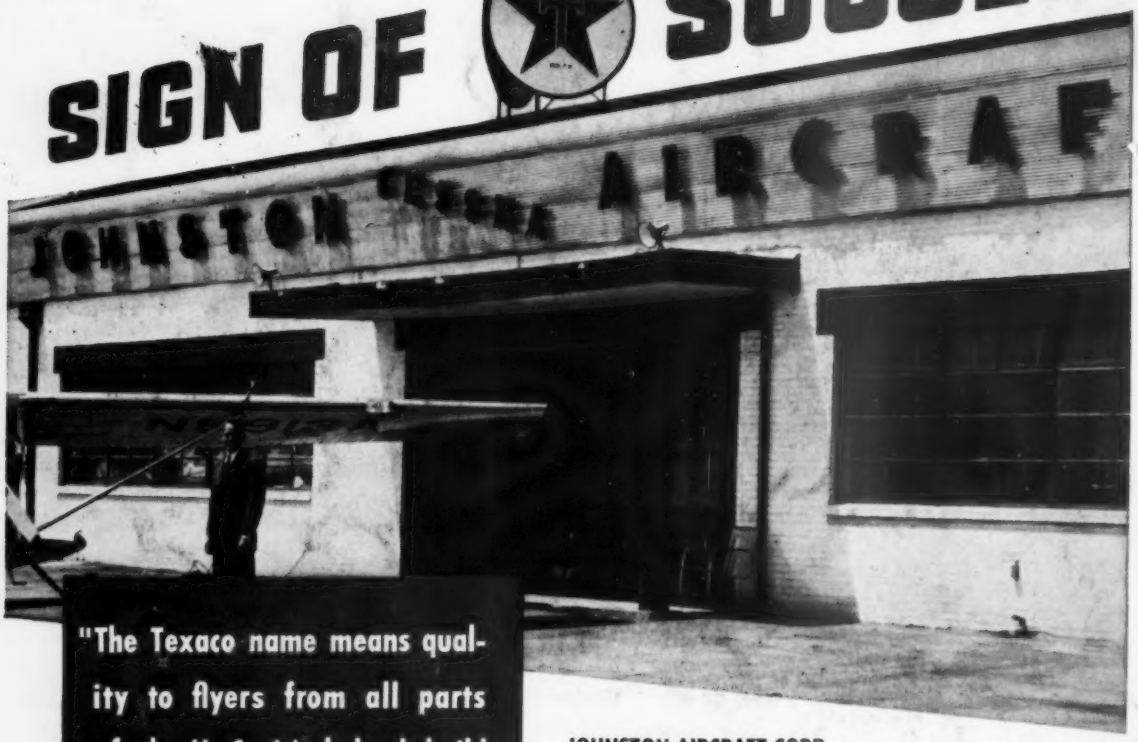

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